

HELMINTHOLOGICAL ABSTRACTS

incorporating
BIBLIOGRAPHY OF HELMINTHOLOGY
For the Year 1948



**COMMONWEALTH BUREAU OF AGRICULTURAL PARASITOLOGY
(HELMINTHOLOGY)**

Winches Farm Drive, Hatfield Road,
St. Albans, England

August, 1949

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HELMINTHOLOGICAL ABSTRACTS *incorporating* BIBLIOGRAPHY OF HELMINTHOLOGY

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HELMINTHOLOGICAL ABSTRACTS

INCORPORATING BIBLIOGRAPHY OF HELMINTHOLOGY

FOR THE YEAR 1948

Vol. 17, Part 4

248—Abstracts of Dissertations Approved for the Ph.D., M.Sc., and M.Litt. Degrees in the University of Cambridge.

- a. DAVENPORT, H. E., 1948.—“Studies on the haemoglobins of some parasitic nematodes.” Year 1946-47, pp. 22-23.
- b. MARRIAN, D. H., 1948.—“The potato eelworm hatching factor.” Year 1946-47, pp. 56-57.

(248a) The haemoglobins of *Ascaris lumbricoides* var. *suis*, *Strongylus* sp. and *Nippostrongylus muris* were found to have very great oxygen affinities, the oxyhaemoglobins being deoxygenated only with difficulty. The velocity of oxidation of the oxyhaemoglobin to methaemoglobin is limited by the low deoxygenation velocity. A unique property of the *Ascaris* haemoglobins is their greater affinity for oxygen than for carbon monoxide. The spectra of *Ascaris* and *Strongylus* oxyhaemoglobins are aberrant. Evidence was obtained that *Nippostrongylus* haemoglobin serves as an oxygen store; *Ascaris* can deoxygenate the haemoglobin of the body-wall, but it was not demonstrated that this oxygen contributes significantly to the parasite's metabolism. Experiments suggested that the *Ascaris* and *Strongylus* pigments are by-products of nutrition. E.M.S.

(248b) This thesis deals with the chemical structure of anhydrotetrone acid which is active as a hatching agent for cysts of *Heterodera rostochiensis*, and deduces the structural features required by other possible agents. It shows that the hatching factor, eclepic acid, can be represented by the formula $C_{18}H_{24}O_8$, with one lactone group, one carboxylic acid group, one enolic group, and one or two hydroxyl groups in the molecule. R.T.L.

249—Acta Gastro-Enterologica Belgica.

- a. GAEHLINGER, H., 1948.—“Parasitisme et infection intestinale.” 11 (2), 76-83.
- b. WARMOES, F., 1948.—“Intérêt de l'examen radiologique dans certains cas d'ascaridiose.” 11 (3), 148-152. [Discussion pp. 154-155.]

250—Acta Leidensia Scholae Medicinae Tropicae.

- a. THIEL, P. H. VAN & WIEGAND BRUSS, C. J. E., 1948.—“Présence de *Prosthenorchis spirula* chez les chimpanzés. Son rôle pathogène et son développement dans *Blattella germanica*.” Year 1947, 18, 200-218.

(250a) [This paper is reprinted from *Ann. Parasit. hum. comp.*, 1945, 20 (5/6), 304-320. For abstract see *Helm. Abs.*, 14, No. 178i.]

251—Acta Medica Italica di Malattie Infettive e Parassitarie.

- a. BASTAGLI, D., 1948.—“La flora batterica intestinale nelle parassitosi.” 3, Suppl. No. 3, pp. 73-80. [English & French summaries p. 79.]
- b. PICCIOLI, A., 1948.—“Contributo alla terapia della ossiuriasi nell'infanzia col violetto di genziana. Osservazioni relative a casi trattati in ambiente tropicale.” 3, Suppl. No. 3, pp. 112-120. [English & French summaries p. 119.]

(251a) Cultures from stools of 40 cases of infection with various protozoal and metazoal intestinal parasites gave abundant growth of *Bacterium coli* often associated with *Staphylococcus aureus*. R.T.L.

* Titles so marked throughout this number have not been seen in the original.

(251b) Piccioli reports from Somaliland the successful use of gentian violet for enterobiasis in 26 Italian prisoners-of-war, 64 Somali children and 32 Italian children. The treatment was absolutely harmless and very effective not only on the adult parasites but also on the eggs. R.T.L.

252—Acta Medica Scandinavica. Supplementum.

- a. BONSDORFF, B. von, 1948.—“Folic acid in the treatment of pernicious tapeworm anemia. *Diphyllobothrium latum* and pernicious anemia. XI.” 131, Suppl. 213, pp. 82-90.

(252a) Pernicious anaemia due to *Diphyllobothrium latum* is quickly resolved by the oral administration daily for 7-10 days of 20-30 mg. folic acid (pteroylglutamic acid). The presence of *D. latum* in the intestine does not impair its anti-anaemic effect. R.T.L.

253—Acta Tropica. Basel.

- a. DESCHIENS, R. & BABLET, J., 1948.—“Sur deux cas d'enclavement appendiculaire d'anneaux de cestodes.” 5 (3), 219-227. [English & German summaries pp. 226-227.]
b. GASCHEN, H., 1948.—“Anomalie de scolex dans du ‘sable hydatique.’” 5 (3), 247-248.
c. PICK, F., 1948.—“Nouveaux dispositifs pour la technique de la coproculture.” 5 (4), 354-357.

(253c) Pick shows that by placing in a conical urine flask or in a funnel instead of in a petri dish his platform of glass slides carrying filter paper with serrated edges, on which is placed a mixture of faeces and charcoal [see below No. 285c], the larvae of hookworm and *Strongyloides* can be collected free from debris. Another simple method is to suspend a small linen bag containing a mixture of faeces and charcoal in a cylindrical glass jar containing water at 40°C., inclined at an angle of 30°. The larvae collect in the angle at the bottom of the jar. R.T.L.

254—Agricultural Engineering. St. Joseph, Mich.

- a. CARTER, W., 1948.—“Soil fumigation.” 29 (10), 434.
b. OWEN, R. R., 1948.—“Equipment for applying soil fumigants.” 29 (10), 435-436.

(254a) Carter explains soil fumigation in terms of its effects on a whole complex of pathogens which accumulate in old soils, particularly those deficient in organic matter; where one pathogenic species dominates the complex, however, the fumigant should be selected with this in view. One unexplained feature is the long-continued effects on the plant, some pineapple plots showing greater effects now than when fumigated three years ago. The great practical problem, efficient incorporation of fumigant with soil, is discussed by Owen [see following abstract]. B.G.P.

(254b) Owen discusses the mechanics of soil fumigation on a field scale, using such fumigants as D-D mixture, chloropicrin, and ethylene dibromide. Large-scale fumigations in Hawaii are carried out by modified mulch-paper-laying machines. Continuity and constancy of application are safeguarded by such means as a sludge-removal device, adjustable reciprocating pumps, glass sight-gauges, spring-loaded injector tips, and precautions against corrosion. Owen also describes smaller equipment based on a gear pump driven from a ground wheel and delivering through flexible hose to the chisels of a cultivator. B.G.P.

255—Agricultural Journal. Department of Agriculture, Fiji.

- a. GARNETT, K. J., 1948.—“Common complaints of dogs in Fiji. Part 2—Worms.” 19 (2), 53-56.

256—American Journal of Clinical Pathology.

- a. PITNER, G., McNAMARA, W. L. & GOGOLAK, F. M., 1948.—“Parasitologic studies of World War II veterans, with special reference to schistosomiasis japonica.” 18 (8), 632-634.
b. HARTZ, P. H. & VAN DER SAR, A., 1948.—“Tropical eosinophilia in filariasis. Occurrence of radiating processes about microfilariae.” 18 (8), 637-644.

(256a) Of 130 U.S. servicemen exposed to infection with *Schistosoma japonicum* five were found to be lightly infected when examined two years after exposure. Eggs of hookworm occurred in 44, *Trichuris trichiura* in 34, *Ascaris lumbricoides* in 3, *Hymenolepis nana* in one, and *Trichostrongylus* sp. in 3. The larvae of *Strongyloides* were found in one case. R.T.L.

(256b) That tropical eosinophilia may be caused by microfilariae is not yet generally known. Microscopical examination of a number of enlarged lymph nodes removed from a swelling between the breast and axilla showed the typical appearances of tropical eosinophilia with microfilariae; many were disintegrating and showed radiate formations. It is suggested that an allergic reaction in previously sensitized patients is caused by substances liberated by the disintegrating worms and may induce these radiate formations. R.T.L.

257—American Journal of Digestive Diseases and Nutrition.

- a. HAUGHWOUT, F. G., 1948.—“Dysentery, colitis and diarrhoea in Japanese civilian prison camps in the Philippines during World War II. II: The secondary colites—post-dysenteric and non-dysenteric. Animal parasites.” 15 (6), 176–183.

258—American Journal of Tropical Medicine.

- a. BROOKS, Jr., T. J., WARD, J. W. & HOLDER, T. M., 1948.—“Studies on the incidence of trichiniasis in Mississippi. Preliminary report.” 28 (6), 863–866.
- b. OLIVIER, L., 1948.—“A note on schistosomiasis in eastern Japan.” 28 (6), 867–875.

(258a) *Trichinella spiralis* cysts were identified, by digestion and compression techniques, in 3 out of 50 (6%) diaphragms of negro cadavers in the Anatomy Department of the University of Mississippi. R.T.L.

(258b) An additional small endemic focus of infection with *Schistosoma japonicum* in the Kanto Plain of Japan is reported near Koya-mura, in the Tone River Basin. R.T.L.

259—American Journal of Veterinary Research.

- a. FOSTER, A. O., ENZIE, F. D., HABERMANN, R. T. & ALLEN, R. W., 1948.—“The status of the sodium fluoride treatment for removal of large roundworms from swine.” 9 (33), 379–385.
- b. EDGAR, S. A., 1948.—“Anthelmintic activity of sodium fluoride in chickens.” 9 (33), 396–398.

(259a) Earlier experience that sodium fluoride is a safe, effective, economical and simple treatment for *Ascaris* in pigs, if administered at the rate of 1% in dry ground feed for one day, is confirmed. The efficacy against *Ascaris* was 93%; against *Hyostrongylus rubidus* it was 62%. Immature as well as mature roundworms were removed. Vomiting and soft faeces, of temporary duration, occurred in about 10% of the cases treated. Concentrations of 4% and 5% sodium fluoride were extremely toxic. When the 1% concentration is used, food consumption is reduced to one-quarter to one-half of the normal owing to its unpalatability, and this provides some protection against overdosage. R.T.L.

(259b) Sodium fluoride is only slightly effective against *Heterakis gallinae* and has no effect on *Capillaria columbae*. It is considered useless as an anthelmintic in poultry owing to its toxicity. R.T.L.

260—American Midland Naturalist.

- a. RAUSCH, R., 1948.—“Observations on cestodes in North American owls with the description of *Choanotaenia speotytonis* n.sp. (Cestoda: Dipylidiinae).” 40 (2), 462–471.

(260a) Rausch redescribes *Paruterina candelabraria* from the great horned owl, *Bubo virginianus* and the barred owl, *Strix v. varia* in the North Central States of the U.S.A. When gravid proglottides of *P. candelabraria* were fed to young laboratory mice cysticercoids in large numbers were found in the liver post mortem 29 and 30 days later. *Choanotaenia speotytonis* n. sp. is reported from the Western burrowing owl, *Speotyto cunicularia hypogaea*, in Colorado. The differential diagnosis of this and other species of *Choanotaenia* is discussed. R.T.L.

261—Anais da Academia Brasileira de Ciencias.

- a. BARBOZA, A., 1948.—"Novo metodo de coloração e montagem de hirudineos, helmintos e pequenos artrópodos." 20 (3), 277-280.

(261a) Barboza describes the preparation of stained whole mounts of cestodes and small nematodes. The living specimen is first relaxed by shaking in ice-water, then compressed in a trichinoscope just sufficiently to prevent movement. A solution of 7% formol in isotonic saline is pipetted round the worm; some hours later the specimen is removed from the trichinoscope into Zenker's fluid. It is then cleared and may be examined in pure acetic acid before being stained in Meyer-Schuberg carmine and differentiated in acid alcohol. Subsequent clearing and mounting is by the ordinary technique. E.M.S.

262—Anatomical Record.

- †a. BULLOCK, W. L., 1948.—"Histochemical studies on the Acanthocephala. I. The distribution of alkaline glycerophosphatase and lipase." 101 (4), 688.
 †b. BULLOCK, W. L., 1948.—"Histochemical studies on the Acanthocephala. II. The distribution of glycogen and fatty substances." 101 (4), 689.
 †c. VAN CLEAVE, H. J. & BULLOCK, W. L., 1948.—"Morphology of *Neoechinorhynchus emydis*, a typical representative of the Eoacanthocephala. I. The praesoma." 101 (4), 726.
 †d. DOUGHERTY, E. C. & MITCHELL, H. K., 1948.—"A quantitative measure of growth for axenic cultures of the nematode, *Rhabditis pellio*." 101 (4), 742-743.
 †e. WALTON, A. C., 1948.—"Parasites of the Ranidae (Amphibia). VIII." 101 (4), 744-745.
 †f. WALTON, A. C., 1948.—"Parasites of the Ranidae (Amphibia). IX." 101 (4), 745.
 †g. WALTON, A. C., 1948.—"Parasites of the Ranidae (Amphibia). X." 101 (4), 745-746.
 †h. ELLIOTT, A. M. & RUSSERT, L. R., 1948.—"Some condition characteristics of a yellow perch population heavily parasitized by *Clinostomum marginatum*." 101 (4), 747.

(262a) Using the Gomori technique in studies on *Echinorhynchus coregoni* and *Pomphorhynchus bulbocolli*, Bullock finds that alkaline phosphatase is most concentrated in the outer part of the subcuticula. It may represent the site of glycogenesis or of the conversion of carbohydrate to fat. Lipase was localized in its greatest concentration in the inner layer of the subcuticula. This technique failed to detect either enzyme in *Neoechinorhynchus cylindricus* or *N. emydis*, an indication, possibly, of a generic difference. R.T.L.

(262b) Glycogen is localized in the muscles, subcuticula, proboscis ganglion and the lemnisci of *Echinorhynchus coregoni*, *Pomphorhynchus bulbocolli*, *Neoechinorhynchus cylindricus* and *N. emydis*. The distribution of fat paralleled that of glycogen. Phospholipoid is concentrated in the subcuticula of the trunk, but is present in the musculature. Cholesterol was observed only in the subcuticula. True fat and fatty acid were most markedly concentrated in the subcuticula of the praesoma, lemnisci and integumentary muscles. R.T.L.

(262c) The morphology of the praesoma of *Neoechinorhynchus emydis* has been studied. A structure not previously described is the muscular sling of the proboscis receptacle. R.T.L.

(262h) [This paper is published in full in *J. Parasit.*, 1949, 35 (2), 183-190. For abstract see *Helm. Abs.*, 18, No. 25s.]

263—Annales Agronomiques. Paris.

- a. POCHON, J. & LAJUDIE, 1948.—"Action de certaines substances nématocides et insecticides sur la microflore normale du sol." 18 (4), 449-451.

(263a) Pochon & Lajudie have examined the effects on the soil flora of injecting benzene hexachloride, D-D mixture or ethylene dibromide, into a field soil and a market-garden soil. The method was to sow 50 soil grains on each of a number of different plated

† Abstracts of papers to be presented at the 45th Annual Meeting of the American Society of Zoologists, Washington, D.C., September 11-13, 1948.

media based on silica gel, and to count the proportion of grains giving rise to colonies. The two soils and three fumigants gave similar results. There were no bactericidal effects and, while most physiological groups showed little change as a result of fumigation, the aerobic nitrogen fixators (*Azotobacter*) and the nitrite bacteria showed a marked increase. This helps to explain the "amendment" action of nematicides on the succeeding crop.

B.G.P.

264—Annales de l'Institut Pasteur. Paris.

- a. DESCHIENS, R., 1948.—"Les substances toxiques vermineuses, leur pouvoir pathogène, leur identification." 75 (5), 397-410.

(264a) Pathogenic substances of verminous origin are of two types, the toxic polypeptides and the allergenic and anaphylactogenic proteins, glycolipoids and polysaccharides. The allergenic substances, but not the toxins, produce eosinophilia. The symptomatology and pathology of acute and chronic verminous toxicosis are described. The toxic polypeptides are not identical with histamine but it seems to be established that they are amine bases or related amino acids, or are capable of liberating or of forming histamine in the body.

E.M.S.

265—Annales Medicinæ Internæ Fenniae.

- a. ESKOLA, O., 1948.—"On the amount of urobilin excreted in urine and faeces in pernicious tape-worm anemia and its relation to the reticulocyte crisis." 37 (1), 1-15.
b. ESKOLA, O., 1948.—"On reticulocytosis in anaemia perniciosa diphyllbothrica during liver treatment, with consideration of the various types." 37 (2), 91-115.
c. ESKOLA, O., 1948.—"Bone marrow picture in early remission of pernicious tape-worm anemia." 37 (2), 116-142.

266—Annales Paediatrici.

- a. STRANSKY, E. & DAUIS-LAWAS, D. F., 1948.—"On hookworm anemia in children." 171 (3), 121-138. [French & German summaries pp. 136-138.]

(266a) In children hookworm anaemia is usually microcytic and hypochromia is a constant feature. It is not exceptional to find cases of macrocytosis. The anaemia is due to (i) loss of blood, (ii) increased demand for iron and protein—if this can be satisfied anaemia will not develop, (iii) multiple vitamin deficiency and secondary infections as additional factors. Improvement is very fast if sufficient iron and protein are administered but may be markedly delayed by secondary infections. The increase of the haemoglobin level is faster if copper sulphate is also added in very small quantities provided the diet is rich in proteins. Hookworm anaemia in the mother may result in severe iron deficiency anaemia in the infant.

R.T.L.

267—Annals of Tropical Medicine and Parasitology.

- a. KIKUTH, W. & GÖNNERT, R., 1948.—"Experimental studies on the therapy of schistosomiasis." 42 (3/4), 256-267.
b. VOGEL, H. & MINNING, W., 1948.—"The action of Miracil in *Schistosoma japonicum* infections in laboratory animals." 42 (3/4), 268-270.
c. CARTER, H. F., 1948.—"Records of *Filaria* infections in mosquitoes in Ceylon." 42 (3/4), 312-321.
d. GORDON, R. M., CHWATT, L. J. & JONES, C. M., 1948.—"The results of a preliminary entomological survey of loiasis at Kumba, British Cameroons, together with a description of the breeding-places of the vector and suggestions for future research and possible methods of control." 42 (3/4), 364-376.
e. KERSHAW, W. E., 1948.—"Observations on *Litomosoides carinii* (Travassos, 1919) Chandler, 1931. I.—The development of the first-stage larva; with a statistical analysis by R. L. Plackett." 42 (3/4), 377-399.

(267a) Miracil-B was highly effective when given by the mouth to mice experimentally infected with *Schistosoma mansoni*. In monkeys, however, it was practically inactive, but miracil-D produced cures in doses of 1×20 mgm. per kg., 2×10 mgm. per kg. or even 2×5 mgm. per kg. Dosages which destroyed mature adults were ineffective against young worms.

R.T.L.

(267b) Six types of miracid, miracid A, B, C, D, Ms. 803 and Ms. 786, did not kill *Schistosoma japonicum* adults and eggs in experimentally infected hamsters, rabbits and monkeys when given in aqueous solution or suspension by means of a stomach tube. R.T.L.

(267c) Mosquitoes caught in Ceylon and in the Maldiv Islands have been examined for filarial infections over a number of years. The data collected are tabulated. *Culex fatigans* caught in suburban houses in Colombo showed filarial infections ranging from 2.2% to 21% and all the mature larvae were indistinguishable from those of *Wuchereria bancrofti*. In the Eastern Province 54 out of 1,300 mosquitoes collected at Toppur which showed filarial infection were with one exception species of *Taeniorhynchus*. In the Maldiv Islands *C. fatigans* was the only species commonly present in houses; eleven *C. fatigans* and one *C. sitiens* out of 196 females were infected. In Hittadu the infection rate in *C. fatigans* was 6.6% and in the segregation islet it was 8%. It is not suggested that the filarial infections noted were necessarily of human origin. R.T.L.

(267d) Kumba, in the southern Cameroons, is today the most notorious centre of loiasis in West Africa. There is a high morbidity rate in European officials as well as in the local inhabitants. In a preliminary survey nine collectors collected 571 Chrysops in 943 hours at dwellings in the station. Of 500 flies (480 *C. silacea* and 20 *C. dimidiata*) 7.2% were naturally infected, presumably with *Loa loa*. The breeding places of the flies are described and illustrated. Suggestions for future control include spraying with D.D.T. or gammexane, bush clearance around dwellings, canalization of streams, screening of houses and use of repellents. R.T.L.

(267e) The early development of the embryos of *Litomosoides carinii* has been followed. Three stages are described, measured and illustrated, viz., those from (i) the neighbourhood of adult females in the mediastinum, (ii) the general pleural cavity and (iii) the peripheral circulation. R.T.L.

268—Arquivos do Instituto Biológico. São Paulo.

- a. PEREIRA, C. & MELLO, M. J. DE, 1948.—"Papel da predisposição do hospedeiro na produção da habronemose cutânea ('esponja') dos equídeos." 18, 363-380. [English summary pp. 373-374.]

(268a) Pereira & de Mello review the literature on the aetiology of "summer sores" in horses and draw attention to the conflicting opinions on the aetiological agents involved. Attempts to produce summer sores by placing larvae of *Habronema muscae* in artificial wounds in a horse previously shown to be refractory were unsuccessful, and there was no increase in mature worms in the stomach. A similar experiment on a donkey, which was subject to spontaneously recurring sores every summer, was successful in producing typical and exuberant summer sores. When repeated, however, the sores although established failed to spread, and at a third attempt the lesions not only failed to spread but regressed. Some predisposition in the host is therefore necessary for the full development of the disease. R.T.L.

269—Australian Journal of Experimental Biology and Medical Science.

- a. LAWRENCE, J. J., 1948.—"The cultivation of the free-living stages of the hookworm, *Ancylostoma braziliense* de Faria, under aseptic conditions." 26 (1), 1-8.

(269a) In experiments designed to obtain infective larvae of *Ancylostoma braziliense* under aseptic conditions Lawrence found that the most reliable solution with which to sterilize the eggs was 10% formalin in 10% "Milton" antiseptic. Larvae developed to the third stage under sterile conditions in a medium of fresh rabbit tissue and water agar. This medium is improved by the addition of liver extract and ground, killed yeast. The most important constituent seems to be a heat-stable water-insoluble factor, but good results also require a heat-stable water-soluble factor. None of the media in which aseptic cultivation succeeded gave as good results as those containing living bacteria. R.T.L.

270—Australian and New Zealand Journal of Surgery.

- a. MILLER, D. & FLEMING, J., 1948.—“Intracranial hydatid disease, with report of a case.” 17 (4), 291-296.
- b. MUIR, J. B. G., 1948.—“Hydatid cyst of the right kidney.” 17 (4), 305-306.

271—Australian Veterinary Journal.

- a. GORRIE, C. J. R., 1948.—“Balling gun injury in sheep.” 24 (6), 148-149.
- b. ROGERS, W. P., 1948.—“The integration of biological, chemical and pharmacological investigation in the search for efficient anthelmintics.” 24 (8), 220-224. [Discussion pp. 224-225.]
- c. GORDON, H. McL., 1948.—“The anthelmintic efficiency of phenothiazine sulphoxide against *Oesophagostomum columbianum* in sheep.” 24 (12), 335-336.

(271a) Attention is drawn to the need of care in the use of the automatic balling-gun for the administration of phenothiazine tablets, especially to lambs and weaners. Occasionally injury or severe bruising to the retro-pharyngeal region may be caused. Although this may not prove fatal it may cause loss of condition. R.T.L.

(271b) Rogers examines the role of critical experimentation in chemotherapy and in the selection of possible anthelmintics, and defines three phases of investigation: (i) biological, to determine the type of component; (ii) chemical and physical, involving the synthesis of the derivatives and analogues of the type, and the determination of their physical and chemical properties; (iii) pharmacological, which correlates the pharmacological, chemical and physical properties of the type compound and its derivatives, and determines the molecular structures enhancing the required action on the biological lesion or suppressing action on the host system. The lack of knowledge concerning helminth physiology greatly limits the application of critical experimentation in the field of helminth therapy. R.T.L.

(271c) Gordon finds that phenothiazine sulphoxide has as high an efficiency and as low a toxicity as phenothiazine as an anthelmintic for *Oesophagostomum columbianum* in sheep, thus confirming Whitten's results based on experiments with *Haemonchus contortus*, *Chabertia ovina* and *O. venulosum*. It has the same disadvantages as phenothiazine in its bulk and relative insolubility and in colouring the fleece and urine. R.T.L.

272—Biological Bulletin.

- a. VON BRAND, T., NOLAN, M. O. & MANN, E. R., 1948.—“Observations on the respiration of *Australorbis glabratus* and some other aquatic snails.” 95 (2), 199-213.

(272a) *Australorbis glabratus* maintained an approximately steady rate of oxygen consumption over a wide range of oxygen tensions. The consumption increased with rising temperature in the range 0.3°-37°C., but 41°C. was lethal. The respiratory quotient sank during inanition to very low levels, and rose only slowly when feeding began again. The implications of these findings on snail control measures are briefly discussed. E.M.S.

273—Blood. The Journal of Hematology. New York.

- a. CRUZ, W. O. & PIMENTA DE MELLO, R., 1948.—“Prophylaxis of hookworm anemia-deficiency disease.” 3 (4), 457-464.

(273a) A patient severely infected with hookworms became clinically normal two weeks after the beginning of blood regeneration which followed the daily administration of 1.0 gm. of ferrous sulphate mixed with manioc flour. Daily doses of 0.2 gm. were sufficient to maintain the blood level for 100 days. The authors consider hookworm anaemia to be a qualitative nutritional deficiency, and hold that the periodic administration of iron would replace the present costly and ineffective prophylactic measures based on radical changes in the habits of the population. In the case cited 1,051 hookworms were evacuated as a result of anthelmintic treatment at the close of the trial period of over a year. R.T.L.

274—Boletín de la Asociación Médica de Puerto Rico.

- a. MARTÍNEZ-VILLAFANE, H. & LANG, A. A., 1948.—“The treatment of schistosomiasis mansoni with neostibosan. Preliminary report.” 40 (6), 128-130. [Discussion pp. 129-130.]

(274a) Neostibosan was administered intravenously to 25 cases infected with *Schistosoma mansoni* in doses of 50 mgm., 100 mgm. and 200 mgm. for the first three days, and continued in 300 mgm. doses on alternate days for two months. Seven of the cases showed eggs with viable miracidia immediately after cessation of treatment but nine showed viable eggs within five months. In the authors' opinion these results do not warrant the use of neostibosan in schistosomiasis mansoni. In the discussion Rodríguez-Molina expressed the view that the mode of administration and the time required for one course of treatment are factors against the use of this drug. Examination of faeces gives a more reliable indication of the efficacy of treatment when carried out after a lapse of one month. R.T.L.

275—Boletín Mensual. Dirección de Ganadería, Montevideo.

- a. VANNI, V. & MURIALDO, A. M., 1948.—“Control biológico de los antihelmínticos.” 30 (1), 1-8.
b. CASSAMAGNAGHI, Jr., A., 1948.—“Singamosis. Reconocimiento de un caso en el Uruguay.” 30 (1), 46-54.

(275a) Earthworms of the genus *Limnodrilus* are recommended for *in vitro* testing of anthelmintics. A series of tests carried out on various substances of accepted anthelmintic value is summarized in a table. E.M.S.

(275b) *Syngamus trachea* was found in a *Molothrus brevirostris* captured in the Department of Canelones. The parasite, its life-cycle, and its lesions in domestic poultry are outlined, together with methods of treatment. E.M.S.

276—British Journal of Ophthalmology.

- a. HOLLAND, H., 1948.—“Hydatid of the orbit.” 32 (7), 395-396.

277—British Journal of Pharmacology and Chemotherapy.

- a. HAWKING, F. & SEWELL, P., 1948.—“The maintenance of a filarial infection (*Litomosoides carinii*) for chemotherapeutic investigations.” 3 (4), 285-296.

(277a) Details are given of the large-scale methods used by the authors for the breeding of *Liponyssus bacoti* in pure culture for experimental transmission of *Litomosoides carinii* to rats for the screening of antifilarial compounds. The percentage of mites which develop filarial infection is small, ranging from 1.4-4.3%, yet 50-100% of the rats exposed became infected. No laboratory animal proved a satisfactory substitute for the cotton-rat. Injections of neostam at 160 mg. per kg., pentostam at 1,300 mg. per kg. and neoarsphenamine at 100 mg. per kg. killed all the adult worms. With anthiomaline at 45 mg. per kg. and tryparsamide at 500 mg. per kg. the females were killed but the males were resistant. *p*-Methylsulphonyl benzamidine hydrochloride had no lethal effect at 50 mg. per kg. In all these experiments the microfilariae were unaffected. R.T.L.

278—British Journal of Radiology.

- a. HEWLETT, H. M., 1948.—“Calcified hydatids of the liver.” [Correspondence.] 21 (248), 426.
b. STRANG, C. & WARRICK, C. K., 1948.—“Radiological demonstration of ascaris infestation.” 21 (251), 575-578.

279—British Journal of Surgery.

- a. MAKAR, N., 1948.—“The bilharzial ureter. Some observations on the surgical pathology and surgical treatment.” 36 (142), 148-155.

280—British Medical Journal.

- a. CAWSTON, F. G., 1948.—"Excretion of antimony." [Correspondence.] Year 1948, 2 (4573), 440.
- b. KONSTAM, P. G., 1948.—"Late recurrence after marsupialization of echinococcus cyst of liver." Year 1948, 2 (4578), 647.
- c. PERRY, W. L. M., 1948.—"A case of dracontiasis." Year 1948, 2 (4590), 1107.
- d. ANON., 1948.—"*Taenia saginata*." [Questions & Answers.] Year 1948, 2 (4590), 1129.

281—British Science News.

- a. LAPAGE, G., 1948.—"Some aspects of British veterinary parasitology." 1 (11), 11-12.
- b. HOBSON, A. D., 1948.—"Nematode parasites of animals." 2 (13), 7-9.

282—Bulletin of the Museum of Comparative Zoölogy at Harvard College.

- a. ABBOTT, R. T., 1948.—"Handbook of medically important mollusks of the Orient and the Western Pacific." 100 (3), 245-328.

(282a) This memoir on the malacology and conchology of the medically important gastropods in the Orient is an invaluable aid to parasitologists and epidemiologists in China, Japan, the Philippines and western Pacific Islands. A system of identification has been devised on the basis of the external characters of the living animal in combination with the method of differentiating shell characters. A revision of molluscan names current in text-books on parasitology and a discussion on the generic validity of *Schistosomophora*, *Katayama* and *Oncomelania* are appended. Abbott considers *Schistosomophora* a synonym of *Katayama* and this genus of subgeneric rank to *Oncomelania*. R.T.L.

283—Bulletin de la Société d'Étude des Sciences Naturelles de Reims.

- a. COURTEHOUX, P., [1948].—"Les hôtes des lapins de garenne. Cestodes et nématodes." 56me-57me Années, 3me Série, 1, 24-27.

(283a) In a rabbit (*Oryctolagus cuniculus*) confiscated in the market on account of emaciation, Courtehoux found strobilae of *Cittotaenia ctenoides* and *Andrya cuniculi* as well as *Cysticercus pisiformis*, *Graphidium strigosum* and *Passalurus ambiguus*. He comments on the double cestode infection. E.M.S.

284—Bulletin de la Société Neuchâteloise des Sciences Naturelles.

- a. JOYEUX, C. & BAER, J. G., 1948.—"Sur une cercaire de *Gorgoderina* (trématodes)." 71, 13-27.
- b. BAER, J. G., 1948.—"Contributions à l'étude des cestodes de sélagiens I-IV." 71, 63-122.

(284a) Joyeux & Baer give an account of a cercaria found in sporocysts in *Sphaerium corneum*, which corresponds to that of *Gorgoderina vitelliloba*. In the laboratory the cercaria encysts in tadpoles of *Rana esculenta* and *Bufo vulgaris*, but has not been found in tadpoles where the naturally infected molluscs occur. The definitive host is unknown. R.T.L.

(284b) As a step towards a natural classification of the cestodes of selachians, Baer discusses the systematic position of *Parataenia*, *Lecanicephalum*, *Tylocephalum*, *Rhinebothrium*, and carefully describes and figures a number of the known species of *Acanthobothrium*. *Caulobothrium* n.g. with *C. longicollis* (Linton, 1890) as type, and *Acrobothrium* n.g. with *A. musculosum* n.sp. as type are created. A key is provided for 13 species of *Acanthobothrium*, and a table for six species of the genus *Rhinebothrium* in which are included *R. rankini* n.sp., *R. burgeri* n.sp., *R. palombii* n.sp. *Acanthobothrium zschokkei* for *Onchobothrium* (*Calliobothrium*) *uncinatum* Zschokke, 1888 and *A. woodsholei* for *A. coronatum* Linton, 1901 are new names. R.T.L.

285—Bulletin de la Société de Pathologie Exotique.

- a. SEFERIAN, V. & MAMO, A., 1948.—“Un cas de bilharziose vésico-rectale en Djezireh (Syrie).” 41 (7/8), 487-490.
- b. DESCHIENS, R. & PICK, F., 1948.—“Conservation de *Watsonius watsoni* (Conyngham, 1904), amphistome de l'homme et des primates dans des conditions extérieures à l'hôte.” 41 (7/8), 490-494.
- c. PICK, F., 1948.—“Dispositif pratique pour la culture des anguillules parasites.” 41 (7/8), 501.
- d. ROMAN, E. & MOREL, P., 1948.—“Evolution de l'éosinophilie au cours de l'anguillulose expérimentale du rat.” 41 (7/8), 543-548.
- e. LAFUENTE, M., 1948.—“Les parasites intestinaux au Gabon. Résultats d'une enquête dans la région de l'estuaire.” 41 (9/10), 588-591.
- f. DESCHIENS, R. & LUSSY, C., 1948.—“Contrôle expérimental de l'action anthelminthique du latex de *Ficus glabrata*.” 41 (9/10), 592-595.
- g. HARANT, H., LAPEYSSONNIE, L. & LANCIEN, 1948.—“Sparganose kystique chez un noir du Gabon.” 41 (11/12), 666-667. [Discussion p. 667.]

(285b) Specimens of *Watsonius watsoni* were kept alive for 13 days in a liquid medium composed of 1 part of horse serum and 7 parts of Ringer's solution with a pH of 7.6. They survived for 18 days on a medium composed of a beef liver extract jelly with 0.8% physiological saline of pH 7.6. These media enabled the authors to study the laying and development of the eggs and the *in vitro* effects of anthelmintics. R.T.L.

(285c) Pick has devised a simple method for cultivating *Strongyloides*. Five glass slides fixed one above the other with paraffin, are covered with filter paper with serrated edges, and the whole placed in a petri dish. The paper is moistened and spread with a mixture of faeces and crushed charcoal to within 5 mm. of the edge. Water is poured into the petri dish to a level a few millimetres below the platform carrying the faeces. The larvae migrate into the water which remains clear. R.T.L.

(285e) An examination of 525 native employees and their families engaged in lumbering on the south bank of the Gabun estuary, 50 km. from Libreville in French Congo, showed that 86.1% were infected with intestinal parasites. The helminth incidence was *Ascaris* 61.9%, hookworm 53.7%, *Trichuris* 38.4%, and *Strongyloides* 1.1%. R.T.L.

(285f) When 1 c.c. of a 10% suspension of latex of *Ficus glabratus* in distilled water was injected daily for eight days into the rectum of mice infected with *Syphacia obvelata* and *Aspiculuris tetraptera* no oxyurids were found post mortem. 50% of the mice treated for six days were positive while all those treated for four days only were still infected. R.T.L.

(285g) An unsegmented cestode about 4 cm. in length was removed from a subcutaneous cyst excised from the right lumbar region of a Gabun cook. The authors cite another case recently reported from the Belgian Congo by Fain [see Helm. Abs., 16, No. 76c.] R.T.L.

286—Canadian Journal of Comparative Medicine.

- a. SWALES, W. E. & GWATKIN, R., 1948.—“Experiments to determine the role of the thorny-headed worm, *Macracanthorhynchus hirudinaceus*, in the occurrence of disease of pigs in Canada.” 12 (11), 297-299.

(286a) Swales & Gwatkin have shown experimentally that *Phyllophaga anxia*, *P. rugosa* and *P. futilis* are efficient intermediate hosts for *Macracanthorhynchus hirudinaceus*. This worm proved highly pathogenic to young pigs. They failed to implicate the helminth or its vectors in the transmission of the virus of swine fever. R.T.L.

287—Canadian Journal of Public Health.

- a. BROWN, M., SINCLAIR, R. G., CRONK, L. B., CLARK, G. C. & KUITUNEN-EKBAUM, E., 1948.—“Intestinal parasites of Eskimos on Southampton Island, Northwest Territories. A preliminary survey.” 39 (11), 451-454.

(287a) In a preliminary survey, *Diphyllobothrium* sp. (9 cases) and *Enterobius vermicularis* (26 cases) were the only helminths found in 95 Eskimos on Southampton Island, Northwest Territories, Canada. R.T.L.

288—Canadian Journal of Research. Section D, Zoological Sciences.

- a. CHOQUETTE, L. P. E., 1948.—“On the species of the genus *Metabronema* Yorke and Maplestone, 1926, parasitic in trout and char.” 26 (6), 329-333.

(288a) Choquette places in the synonymy of *Metabronema salvelini* Fujita, 1920 the species named *M. harwoodi*, *M. canadense* and *M. truttae*, on the basis of a study of the spicules and the characters of the post-cloacal papillae.

R.T.L.

289—Ceylon Journal of Science. Section B. Zoology (Spolia Zeylanica).

- a. FERNANDO, W., 1948.—“The distribution of vitamin C in *Caridinicola indica* Annandale.” 23 (3), 113-118.
b. LOOS, C. A., 1948.—“Notes on free-living and plant-parasitic nematodes of Ceylon 3.” 23 (3), 119-124.

(289a) Fernando has demonstrated the presence of vitamin C in the body-wall, alimentary canal, and excretory, nervous and reproductive systems of the temnocephalid *Caridinicola indica*. The vitamin C granules are found to adhere closely to the nuclei and adjacent cytoplasm of the intestinal cells. They are also found in the pharyngeal and intestinal contents. It is suggested that the vitamin may be absorbed from the food, and may also be synthesized by the cells. The distribution of vitamin C in *Caridinicola* appears to be correlated with its glycogen distribution. [See also Helm. Abs., 14, No. 123b.] H.C.

(289b) Loos describes and figures two species of *Hemicycliophora* de Man, 1921 and shows that the genus *Procriconema* Micoletzky, 1925 should be considered as synonymous with it. Up to the appearance of this paper females only of *Procriconema* had been found; Loos found males along with females, the males agreeing in morphological details with de Man's *Hemicycliophora*, the description of which was based on a single male specimen. *Procriconema membranifer* Micoletzky, 1925 becomes a synonym of *Hemicycliophora typica* de Man, 1921. The second species is *H. longicaudata* n. sp.

T.G.

290—Chemische Berichte.

- a. MAUSS, H., 1948.—“Über basisch substituierte Xanthon- und Thioxanthon-Abkömmlinge; Miracil, ein neues Chemotherapeuticum.” 81 (1), 19-31.

291—Chinese Medical Journal. Shanghai.

- a. HSU, K.-C., 1948.—“Malaria in southern and western Szechuan with a note on the occurrence of schistosomiasis japonicum.” 66 (6), 319-323.
b. HSU, K.-C., 1948.—“A survey of the helminths of dogs in Chengtu, Szechuan.” 66 (7), 366-370.

(291a) Hsu records a case from Pei Yang Pa, about ten li from Kiating, with eggs of *Schistosoma japonicum*, *Fasciolopsis buski* and *Ascaris lumbricoides* in the faeces. *Oncomelania* sp. were found in this area and in Ch'ien-wei, Suifu and Lochow. Ancylostomiasis was very prevalent in Shih Ma Chi (Suifu) and Ho Chia Pa (Lochow), and in neighbouring cities.

R.T.L.

(291b) From 169 dogs in Chengtu, seven species of nematodes, four of trematodes and three of cestodes were collected by Hsu. The incidence was: *Ancylostoma caninum* 78.7%, *A. braziliense* 39.6%, *Uncinaria stenocephala* 1.2%, *Toxocara canis* 14.8%, *Spirocerca sanguinolenta* 24.9%, *Dirofilaria immitis* 59.8%, *Thelazia callipaeda* 13%, *Clonorchis sinensis* 35.5%, *Metagonimus yokogawai* 1.8%, *Paragonimus* spp. 1.8%, *Microtrema truncatum* 1.8%, *Taenia hydatigena* 26.6%, *Diphyllbothrium mansonii* 22.5%, and *Dipylidium caninum* 59.9%. The occurrence of *M. truncatum* has apparently not been recorded in China previously.

R.T.L.

292—Circular. Oklahoma A. & M. College Extension Service.

- a. CHESTER, K. S. & McLAUGHLIN, J. H., 1948.—“Recognition and control of vegetable diseases.” No. 475, 15 pp.

293—Comptes Rendus des Séances de l'Académie des Sciences. Paris.

- a. POCHON, J. & LAJUDIE, J., 1948.—"Action de certains antiseptiques sur la microflore normale du sol." 226 (25), 2091-2092.

(293a) [A fuller account of this paper appears in *Ann. agron., Paris*, 18 (4), 449-451. For abstract see above No. 263a.]

294—Deutsche Tierärztliche Wochenschrift.

- a. WETZEL, R., 1948.—"Zur planmässigen Bekämpfung der Pferdestrongyliden mit Phenothiazin." 55 (41/42), 315-320.

(294a) The practices in Lower Saxony of bringing all the horses of a farm into the paddock overnight, and of housing them during the winter untethered in large stalls where they are fed from the ground, are shown to be conducive to a heavy degree of strongylosis. Under these conditions and without special hygienic measures, Wetzel tested the following system of prophylactic phenothiazine administration. All carriers, whether clinically affected or not, were treated before depasturing in spring with three daily doses of 10 gm. phenothiazine for horses, or two daily doses of 7 gm. or 5 gm. for yearlings and foals respectively. Treatment was repeated when the animals were housed in autumn. Pregnant mares were treated 6-8 weeks before foaling, or if this was not possible, 14 days after foaling. Foals were examined and treated if necessary three times, at 3-5 months, at 8-10 months and again at 12-15 months. The dosing of stalled animals was correlated with the changing of their litter. On one farm where the average worm egg-count in five horses was 1,440 per gm. of faeces in March, 1947, application of these measures produced a steady reduction in egg-counts to an average of 12 per gm. in June 1948, two months after the third treatment.

E.M.S.

295—Dokladi Akademii Nauk SSSR.

- a. BAUER, O. N., 1948.—[The systematic position of *Ankyrocotyle baicalense* Wlasenko.] 59 (2), 383-386. [In Russian.]
- b. SPASSKI, A. A., 1948.—[A new cestode family, Skrjabinochoridae n. fam., characterized by complete absence of uteri.] 59 (2), 409-411. [In Russian.]
- c. SPASSKI, A. A., 1948.—[Change of function of the attachment apparatus in the cestode *Insinuaroetaenia schikhobalovi* n.g., n.sp.] 59 (4), 825-827. [In Russian.]
- d. OSHMARIN, P. G. & MOROZOV, F. N., 1948.—[Substitution of the fixatory function of the suckers in the cestode *Aploparaksis sobolevi* n.sp.] 59 (8), 1509-1511. [In Russian.]
- e. SPASSKI, A. A., 1948.—[*Mathevolepis petrotschenkoi* n.g., n.sp.—a new cestode genus with uterine canals for the development of the eggs.] 59 (8), 1513-1515. [In Russian.]
- f. SKRYABIN, K. I. & SHIKHOBALOVA, N. P., 1948.—[Systematic revision of the nematode family Subuluridae.] 60 (1), 189-191. [In Russian.]
- g. SKRYABIN, K. I., 1948.—[Analysis of the generic components of the nematode family Atractidae Travassos, 1919.] 60 (4), 749-751. [In Russian.]
- h. DUBININ, V. B., 1948.—[Developmental cycle of *Macracanthorhynchus catulinus* Kostylev, 1927.] 60 (6), 1109-1111. [In Russian.]
- i. ALBOVA, R. E., 1948.—[A new species of monogenetic trematode of the genus *Gyrodactyloides* Bychowsky, 1947.] 60 (9), 1615-1616. [In Russian.]
- j. SCHULZ, R. S., 1948.—[New nematodes from Altai and Mongolian rodents (Ochotonidae—"creepers").] 61 (1), 173-176. [In Russian.]
- k. DUBININ, V. B., 1948.—[Finding of Pleistocene lice (Anoplura) and nematodes in mummified Siberian marmots.] 62 (3), 417-420. [In Russian.]
- l. RIZHIKOV, K. M., 1948.—[Phylogenetic relationships within the nematode family Syngamidae, with revision and systematic findings.] 62 (5), 733-736. [In Russian.]
- m. SCHULZ, R. S. & ANDREEVA, N. K., 1948.—[Morphology and biology of a new nematode from the musk-deer.] 62 (6), 841-843. [In Russian.]
- n. SCHULZ, R. S. & KADENATSII, A. N., 1948.—[Morphology of the copulatory organs in the new nematode genus *Capreocaulus* from roe-deer.] 63 (3), 341-344. [In Russian.]

(295a) Bauer makes a detailed analysis of *Ankyrocotyle baicalense* Wlasenko, a monogenetic trematode from the gills of *Thymallus arcticus* and *T. arcticus pallasii* and comes to the conclusion that this species is only a synonym of *Tetraonchus borealis* (Olsson, 1893).

C.R.

(295b) Spasski describes the cestode *Skrjabinochora sobolevi* n.g., n.sp., from the intestine of *Lacerta agilis*. He considers it to belong to the Anoplocephalata, but as its main characteristic is the absence of a uterus or its derivatives at all stages of development, Spasski creates for it a new family Skrjabinochoridae. A diagnosis is given of the family and the genus as well as drawings of this cestode: the scolex is not shown. C.R.

(295c) Spasski describes *Insinuarotaenia schikhobalovi* n.g., n.sp., from the small intestine of *Meles meles*. The main feature of this taeniid cestode is the presence of a peculiar muscular structure in front of the suckers, which is described as the organon permearum. According to Spasski, during the evolution of this tapeworm the mode of fixation was changed: the hooks became atrophied, and instead of being attached to the mucosa the tapeworm penetrates with its anterior end deeper into the tissue. The paper gives a figure of the organon permearum and also a diagnosis of the new genus. C.R.

(295d) Oshmarin and Morozov describe *Aploparksis sobolevi* n.sp. from the duodenum of *Capella gallinago*. This species differs from *A. penetrans* in having no suckers, and in the greater length and size of the scolex hooks. Three drawings are included. C.R.

(295e) Spasski describes *Mathevolepis petrotschenkoi* n.g., n.sp. (Hymenolepidinae), from the intestine of a shrew. He gives a diagnosis of the new genus *Mathevolepis* of which the main feature is the presence of a canal situated at the posterior end of the segments for the development of the eggs. C.R.

(295f) After reviewing the family *Subuluridae*, Skryabin & Shikhobalova conclude that the classification should be revised. They propose to raise the genus *Heteroxyndema* to the status of a family Heteroxyndematidae n. fam. The subfamily Hoplodontophorinae is taken from the Subuluridae and raised to family rank as Hoplodontophoridae n. fam. The family Subuluridae is divided into subfamilies as follows: (i) Subulurinae containing the genera *Subulura*, *Leipoanema*, *Numidica*, *Oxyndema* and *Aulonocephalus*; (ii) Maupassininae n. subf., containing the genus *Maupasina* and (iii) Heterobulurinae n. subf., containing the genus *Heterobulura* n.g. which is created for *Subulura colloso*. A key is given to these three subfamilies. [The subfamily name Maupassininae (here misspelled Maupassininae) is not new, having been erected by López-Neyra in 1945 (see Helm. Abs., 14, No. 486c).] C.R.

(295g) According to Skryabin the criteria of classification of the family Atractidae are artificial and the nematodes in this family have no phylogenetic relationships. Therefore, after discussing the characters of the genera at present included in the Atractidae, he proposes the following revision. The family Atractidae is divided into three families: (i) Atractidae containing the genus *Atractis*; (ii) Labiduridae with the genus *Labiduris*; (iii) Crossocephalidae n. fam. with the genus *Crossocephalus*. All these families are placed in the Oxyurata. He also creates a new family which he places in the Spirurata, namely Cobboldinidae, which is divided into two new subfamilies: Cobboldininae containing the genera *Cobboldina* and *Leiperenia*, and Cyrtosomatinae containing the genera *Cyrtosomum* and *Monhysterides*. C.R.

(295h) Dubinin found larvae of *Macracanthorhynchus catulinus* in the muscles, mesentery, body-cavity and internal organs of *Vulpes korsak*, *Meles meles raddei*, *Mustela nivalis*, *Putorius eversmanni*, *Marmota sibirica*, *Citellus dauricus* and *Erinaceus dauricus*. On two occasions he fed larvae obtained from some of these animals to *Vulpes korsak* and in 12 and 15 days respectively, sexually mature specimens of the parasite were obtained. He assumes that there are two intermediate hosts, and that the first is probably an insect. C.R.

(295i) Albova describes *Gyrodactyloides bychowskii* n. sp. from the gills of *Salmo salar brevipes*. It differs from *G. petruschewskii* in having a much stronger opisthaptor and in the length of the hooks. C.R.

(295j) Schulz describes *Eugenuris schumakovitschi* n.g., n.sp., from the large intestine of *Ochotona daurica*. It belongs to the subfamily Oxyurinae and differs from related genera in having a two-storied buccal cavity and in the absence of spicules. He also describes *Cephaluris andrejevi* n.sp. from the large intestine of *Ochotona alpina*. This differs markedly from *C. ochotonae* in having a shorter body and larger eggs. He creates a new subfamily Acanthoxyurinae into which he places the genera *Acanthoxyuris* and *Cephaluris*. C.R.

(295k) Dubinin found in the caecum of the Pleistocene species *Citellus glacialis*, a nematode belonging to the genus *Syphacia*. C.R.

(295l) Rizhikov discusses the phylogenetic relationships within the family Syngamidae and concludes that this family should be classified as follows. He creates two new subfamilies Syngaminae and Cyathostominae. Syngaminae is divided into two genera, *Syngamus* and *Mammomonogamus* n.g.; *Syngamus* is further divided into two new subgenera *Ornithogamus*, containing the species *S. (O.) microspiculum* and *S. (O.) merulae*, and *Syngamus*, containing the rest of the species from birds. In *Mammomonogamus* he includes all the species recorded from mammals. The subfamily Cyathostominae includes the genus *Cyathostoma*. C.R.

(295m) Schulz & Andreeva describe the protostrongyle *Pneumocaulus kadenazii* n.g., n.sp., obtained from the lungs of two musk deer (*Moschus moschiferus*) which died in the Moscow Zoopark. A full description of the species and a diagnosis of the genus are given. A figure of the posterior end of the male is also included. The authors fed the larvae of this nematode to *Helix carthusiana*, and later found them to be infested with larvae measuring 0.48–0.62 mm. *P. kadenazii* differs from other genera by reason of the presence of large lateral glandular structures at the tail end of the male. C.R.

(295n) Schulz & Kadenatsii found *Protostrongylus capreoli* in the lungs of *Capreolus capreolus*. A redescription of the species is given. They conclude that the species should be transferred to *Capreocaulus* n.g., as the structure of the bursa copulatrix differs from that of any other genus of the Protostrongylidae. A diagnosis of the new genus is given. C.R.

296—Edinburgh Medical Journal.

a. DOUGLAS, D. M., 1948.—“Hydatid disease.” 55 (2), 78–91.

(296a) Hydatid disease is endemic in the central plain of Iraq, between the Tigris and Euphrates, where sheep are raised in large numbers. One hundred and forty cases were surgically treated in the Royal Hospital, Baghdad between 1942 and 1946. In 107 of these cases the cysts occurred in the liver or lung. General diagnostic methods are outlined. It is observed that a subcutaneous tumour which in Britain would be dismissed as a lipoma may in Iraq prove to be a hydatid cyst. Aspiration is condemned owing to the risk of leakage. The hydatid thrill is not usually present when there are daughter cysts and is of doubtful diagnostic value. In all surgical treatment the germinal layer should be eliminated without spillage. Recurrence after surgery is by no means rare. R.T.L.

297—Farmer and Stock-Breeder.

a. PATTERSON, W., 1948.—“Tackling the potato eelworm.” 62 (3073), 2022.

(297a) Patterson describes the steps now being undertaken by the Ministry of Agriculture of Northern Ireland to ensure the production of seed potatoes guaranteed free from eelworm. On the great majority of the farms, potatoes are grown once only in an eight-year rotation. The total acreage now affected in Northern Ireland is under 100 acres. The Potato Root Eelworm (Northern Ireland) Order makes eelworm a notifiable disease. On such land potatoes may not be planted. Seed potatoes already growing may not be planted elsewhere on the farm or moved except under licence. Affected soil may not be

moved from one part of a farm or garden or building to another part of the farm. Affected soil where tomatoes have been grown must be steam sterilized. The order also applies to private gardens and greenhouses. All land where stock seed potatoes are grown must be officially tested and found free from eelworm before the Ministry's certificate is issued.

R.T.L.

298—Farming in Gloucestershire.

- a. BOOY, A., 1948.—“Tomato plants and root-knot eelworm.” 7 (4), 87, 89.

299—Farming in South Africa.

- a. VAN DER LINDE, W. J., SMITH, A. J. & NEETHLING, L. J., 1948.—“Control of eelworm. (With special reference to D-D.)” 23 (269), 509-516, 546.
 b. SELLSCHOP, J. P. F. & DU TOIT, J. J., 1948.—“The production of potatoes.” 23 (271), 645-654.
 c. ORTLEPP, R. J., 1948.—“The Ascaris worm of pigs.” 23 (273), 795-797, 800.

(299a) Van der Linde et al. give a brief account of *Heterodera marioni* in South Africa and discuss its control. It is very important to keep seed-beds clean since in this way clean land is not infested from transplants, and even when transplanted to infested land a clean seedling has a better chance of survival. D-D is recommended for use at soil temperatures between 40° and 70°F., injected 8 in. deep at the rate of 6 c.c. per sq. ft. and followed by a water seal. Desiccation by frequent ploughing of the land in summer may kill the eelworm, but is liable to cause wind and water erosion. Clean fallowing and rotation with non-susceptible crops are valuable.

B.G.P.

(299b) In South Africa rotational cropping, as elsewhere, is essential for the control of eelworm [*Heterodera marioni*] in potatoes. Tomatoes and tobacco should not be grown more than once every three or four years on the same land. The most suitable crops to grow in rotation with potatoes are maize, kaffircorn, winter cereals and most grasses. The susceptible crops, viz., beans, cowpeas, soybeans, sunflower and pumpkin, should be avoided. Sunnhemp, groundnuts and velvet beans are highly resistant.

R.T.L.

(299c) After outlining the life-history, symptoms and post-mortem appearances due to *Ascaris* infection in pigs, Ortlepp gives advice on treatment. The best remedies are sodium fluoride and chenopodium oil. The recommended dose of sodium fluoride is 1 gm. per 10 lb. live-weight thoroughly mixed with a day's concentrates or bran ration, divided into three equal portions and given in the morning, at midday and late in the afternoon. No food should be given on the previous evening. The chenopodium oil should contain at least 60% of ascaridol. The dose is 1 c.c. of chenopodium oil and 8 c.c. of castor oil per 25 lb. live-weight but should never exceed 12 c.c. of chenopodium oil. Treatment should follow starvation for 12-18 hours. The mixture should be given by a syringe with a rubber tube pushed through a hole in a strip of hard wood 15 in. × 12 in. × 1 in. placed crosswise in the pig's mouth. A second treatment should be administered four weeks later after transfer to a temporary sty and a third treatment when they are returned to a permanent sty.

R.T.L.

300—Försök och Forskning. Stockholm.

- a. LARSEN, H., 1948.—“Växtföljden och växtsjukdomarna.” 5 (2), 14, 15.

(300a) Among the plant diseases which may be propagated by faulty systems of crop rotation, Larsen includes those caused by the eelworms of clover, wheat, oats, beet and potato. The susceptible crop and weed hosts of each species are shown in a table. In field experiments in Denmark the percentage of new infestation with clover eelworm [*Anguillulina dipsaci*] was 44 after two years without clover, 26 after three years and 9 after four years. Only after 7-8 years had infestation entirely disappeared.

J.T.G.

301—Indian Farming.

- a. MOHAN, R. N., 1948.—“Nasal schistosomiasis: its control and treatment in West Bengal.” 9 (8), 332–334.
 b. CHAKRAVARTI, R., 1948.—“Eelworm diseases in plants.” 9 (11), 447–450.

(301a) Nasal granuloma due to *Schistosoma nasalis* is widespread in West Bengal and particularly in the south-western districts. An immediate abatement of the clinical condition has followed intravenous injections with tartar emetic but a large proportion of the animals were still affected some months after a complete course of treatment. Immediate toxic effects occurred in a considerable proportion of the animals treated and there were occasional deaths. The same results followed this treatment in cases of dum-dum sores due to *stephanofilariasis*. The somewhat costly antimosan gave much better results and relapses were rare. Practically no response followed constant propaganda on control by mollusc eradication. R.T.L.

(301b) Very little is known of the eelworm diseases of plants in India and the ravages they cause. *Heterodera marioni* infections are stated to be abundant in *Hibiscus esculentus*, *H. cannabinus*, *Phaseolus aureus*, *P. Mungo*, *Cicer arietinum*, *Dolichos biflorus*, *Medicago sativa* and *Cyamopsis psoraloides* while *Vigna Catjang*, *Cucurbita maxima*, *Arachis hypogaea*, *Capsicum annum*, *Dolichos Lablab*, *Linum usitatissimum*, *Eleusine coracana* and *Coriandrum sativum* are mildly infected. In the Punjab *Anguillulina tritici* is prevalent. In Bengal, Assam and Malay “Ufra” disease of rice is due to *A. angusta*; in one area 6 out of 21 million acres were heavily attacked and caused losses amounting to nearly 2 lakhs of rupees. Bud-rot in the areca palm, due to *Aphelenchus* sp., has recently been reported from Mysore. R.T.L.

302—Indian Journal of Helminthology.

- †a. THAPAR, G. S., 1948.—“A new monogenetic trematode from the gills of an Indian fish, *Catla catla*, from Lucknow.” 1 (1), 1–10.
 †b. ANANTARAMAN, M., 1948.—“Observations on *Cercaria patialensis* Soparkar, 1924, and its relationships.” 1 (1), 11–22.
 †c. VIDYARTHI, R. D., 1948.—“Some new members of the family Cyathocotylidae Poche, 1925 from Indian birds.” 1 (1), 23–40.
 †d. SINGH, K. S., 1948.—“On a new cestode, *Gangesia lucknowia* (Proteocephalidae) from a freshwater fish, *Eutropichthys vacha* Day, with a revised key to the species of the genus.” 1 (1), 41–46.
 †e. DAYAL, J., 1948.—“Trematode parasites of Indian fishes. Part I. New trematodes of the family Bucephalidae Poche, 1907.” 1 (1), 47–62.
 †f. RAWAT, P., 1948.—“A new species of *Aspidogaster* from the intestine of a fresh water fish, *Labeo rohita*.” 1 (1), 63–68.

(302a) *Paradactylogyrus catlaius* n.g., n.sp., found on the gills of the freshwater fish, *Catla catla*, shows a combination of the characters of several known monotreme genera. It has one pair of anchors and a single anchor bar on the haptor, a single median “onchium” along the margin of the haptor in addition to the usual 14 hooklets, a cirrhal thread and a horseshoe-shaped accessory piece with a posterior handle. The vagina and cirrus are chitinated. R.T.L.

(302b) The unique furcocercous *Cercaria patialensis*, previously recorded by Soparkar from the Punjab, has now been found in the Madras Presidency and is redescribed and its affinities discussed. It agrees in many respects with the cyclocoelid *Typhlophilus shovellus*. R.T.L.

(302c) Six new species of Cyathocotylidae are described from Indian birds, viz., *Prohemistomum secundum* n.sp. and *Mesostephanus indicus* n.sp. from *Milvus migrans*, *M. lützi* n.sp. from *Buteo rufinus*, *Holostephanus thaparus* n.sp. from *Neophron percnopterus*,

† Actual date of publication: January 1949 [information supplied by the Editor, *Indian Journal of Helminthology*]

H. phalacrocorax n.sp. from *Phalacrocorax niger*, and *Cyathocotyle aningi* n.sp. from *Anhinga melanogaster*. The division of *Cyathocotyle* into two subgenera *Neocyathocotyle* and *Cyathocotyle* by Mehra is not accepted.

R.T.L.

(302d) *Gangesia lucknowia* n.sp. from *Eutropiichthys vacha* differs from other forms in the presence of two rows of rostellar hooks. A key is given to the five known species.

R.T.L.

(302e) *Neoprosorhynchus purius* n.g., n.sp. collected from *Epinephelus lanceolatus*, *Neobucephalopsis bagarius* n.g., n.sp. from *Bagarius yarrellii*, *Bucephalopsis sinhai* n.sp. from *Eutropiichthys vacha*, *B. thapari* n.sp. from *Pseudotropius taakree*, and *B. macronius* n.sp. from *Macrones seenghala* are described and differentiated from allied bucephalid species.

R.T.L.

(302f) *Aspidogaster piscicola* n.sp. from *Labeo rohita* is described and differentiated from the four species already known.

R.T.L.

303—Indian Medical Journal.

- a. JOSHI, T. R., 1948.—“An interesting case of solitary roundworm infection.” 42 (5), 111.

304—Iowa Veterinarian.

- a. KRICHEL, J. H., 1948.—“Parasitism in small animals; diagnosis and treatment.” 19 (2), 9-11, 25-26, 28, 30, 32.

305—Journal of the American Chemical Society.

- a. CLEMENCE, LeR. W. & LEFFLER, M. T., 1948.—“Organic thio-antimonials in schistosomiasis.” 70 (7), 2439-2440.

(305a) Clemence & Leffler summarize the methods of preparation of a series of thio-antimony compounds, which are either oils or low-melting solids soluble in vegetable oils, by the action of antimony trichloride on the appropriate mercaptan in chloroform. It is stated that the antimony compounds showed some promise in preliminary tests on experimental schistosomiasis but the results are not yet published.

R.T.L.

306—Journal of the American Pharmaceutical Association. Scientific Edition.

- a. HALPERN, A., 1948.—“Ascaridol in oil of chenopodium.” 37 (4), 161-165.
b. HALPERN, A., 1948.—“An investigation of the assay of ascaridol. II. The iodination of terpenes.” 37 (11), 465-467.

(306a) Halpern reviews the methods used for the determination of ascaridol in oil of chenopodium and emphasizes the need for a re-investigation of the oxidative behaviour of ascaridol.

R.T.L.

307—Journal of the American Veterinary Medical Association.

- a. DAVIS, R. W. & EPLING, G. P., 1948.—“Verminous aneurysm of the anterior mesenteric artery in a filly.” 113 (859), 339-342.
b. WOODHOUSE, C. A., 1948.—“Observations on pathogenicity of *Strongyloides* parasites in ruminants.” 113 (859), 354-356.
c. KANEGIS, L. A., 1948.—“A new treatment for ascariasis in dogs and cats.” 113 (861), 579-581.

(307a) In the wall of an aneurysm of the anterior mesenteric artery of a filly there were numerous immature strongyles. Only one was identified as *Strongylus vulgaris*. The caecum and large intestine contained thousands of *S. edentatus* and numerous *Triodontophorus* but no identifiable *S. vulgaris*. This leads the authors to suggest that possibly *S. edentatus* larvae may also cause aneurysm in equines.

R.T.L.

(307b) From clinical observations in sheep and calves, Woodhouse is of the opinion that *Strongyloides papillosus* can be of considerable pathological importance. The symptoms and post-mortem findings of an experimentally infected ram are given. Death occurred in 36 days, after the animal had become considerably emaciated; the post-mortem worm count was over 30,000 *S. papillosus*. An 18-months-old steer similarly infected with the sheep strain showed the initial symptoms but no eggs appeared in the faeces: the condition improved after the 18th day and complete recovery ensued. J.W.G.L.

(307c) Kanegis summarizes the literature on the new anthelmintic Caricide (1-diethylcarbamy-4-methyl piperazine dihydrogen citrate), known in human medicine as Hetrazan. Experimental evidence is given of its use in 26 cats and kittens against ascarids and it is concluded that a single dose of 25 mg. per lb. body-weight, given orally without previous fasting, is the most satisfactory: the drug was almost 100% effective. No abnormal symptoms were shown in dogs given 50 mg. per lb. body-weight after feeding except one case of vomiting; cats given up to 36.6 mg. per lb. body-weight were unaffected. J.W.G.L.

308—Journal of Animal Science.

- a. WEIR, W. C., BAHLER, T. L., POPE, A. L., PHILLIPS, P. H., HERRICK, C. A. & BOHSTEDT, G., 1948.—“The effect of hemopoietic dietary factors on the resistance of lambs to parasitism with the stomach worm, *Haemonchus contortus*.” 7 (4), 466-474.
- b. BADR, M. F., BAHLER, T. L., POPE, A. L., HERRICK, C. A., BOHSTEDT, G. & PHILLIPS, P. H., 1948.—“The effect of stomach worm (*Haemonchus contortus*) infection on some of the B-complex vitamins in the blood and rumen of lambs.” [Abstract of paper to be presented at the 40th Annual Meeting of the American Society of Animal Production, Chicago, November 26 and 27, 1948.] 7 (4), 520.

(308a) Tests on worm-free lambs experimentally infected with *Haemonchus contortus* larvae gave results which are interpreted to mean that the addition of minerals to the ration renders the host more favourable for the establishment and development of *H. contortus*. Those receiving the minerals showed eggs in the faeces five to seven days earlier, and the largest numbers of worms. The haemoglobin level was depressed in all cases by the infection. Blood plasma vitamins A and C, inorganic phosphorus and total plasma protein were adversely affected in varying degrees. R.T.L.

309—Journal of the Council for Scientific and Industrial Research. Australia.

- a. WHITLOCK, H. V., 1948.—“Some modifications of the McMaster helminth egg-counting technique and apparatus.” 21 (3), 177-180.
- b. WHITLOCK, H. V., 1948.—“A method for staining small nematodes to facilitate worm counts.” 21 (3), 181-182.

(309a) The simplicity and accuracy of the McMaster egg-counting technique is retained by modifications which reduce the time taken in counting. The faecal suspension is stirred by an electric mixer. A new sieve pipette is used to remove samples of the suspension. A new counting-chamber slide has been introduced, and also a new shatter-proof cement which does not become brittle with age and can withstand washing with hot water. R.T.L.

(309b) The semi-transparent nematodes in the intestines of sheep can be made easily visible by adding a few drops of concentrated aqueous iodine solution (30 gm. iodine, 40 gm. potassium iodide, 100 ml. water) to the washed worms in physiological saline solution. After 3-5 minutes the worms become deep brown; debris and supernatant fluid are also stained. A concentrated solution of sodium thiosulphate is now stirred in drop by drop. The fluid and debris are decolourized. The worms show up prominently and can be counted against a white background, but decolourize quickly. Worms on the mucous membrane can be similarly stained for demonstration purposes. A simple sampling pipette is illustrated: it is made from a test tube as plunger and a piece of glass tube, drawn out to an opening 1 cm. in diameter, as barrel, the two being connected by a piece of soft rubber tubing. The plunger may be lubricated with vaseline or liquid paraffin. R.T.L.

310—Journal of the Elisha Mitchell Scientific Society.

- a. BRITT, H. G., 1948.—“Gametogenesis and fertilization in the digenetic trematode, *Pneumatophilus variabilis*.” [Abstract of paper presented at the 45th Annual Meeting of the North Carolina Academy of Science, Davidson, N. C., May 7 and 8, 1948.] 64 (2), 180-181.
- b. HARKEMA, R. & KARTMAN, L., 1948.—“Observations on the helminths and ectoparasites of the cotton rat, *Sigmodon hispidus hispidus* Say and Ord, in Georgia and North Carolina.” 64 (2), 183-191.
- c. LARSH, Jr., J. E. & GRAVATT, M. S., 1948.—“A comparative study of the susceptibility of guinea pigs and hamsters to an infection with pig ascaris.” 64 (2), 192-195.
- d. LARSH, Jr., J. E. & FLETCHER, Jr., O. K., 1948.—“Further studies in mice on the effect of alcohol on acquired immunity to *Trichinella spiralis*.” 64 (2), 196-203.

(310b) The filariid *Litomosoides carinii* was not found in *Sigmodon h. hispidus* in Georgia or North Carolina. *Schizotaenia sigmodontis*, *Taenia taeniaeformis* larvae and *Mastophorus muris-ascaroides* occurred in Georgia cotton-rats while *Raillietina bakeri*, *Hymenolepis diminuta*, *H. microstoma*, *Andrya microti*, *Taenia taeniaeformis* larvae, *Longistriata adunca* and *Mastophorus muris-ascaroides* were collected from North Carolina specimens. It is of interest to note that the mite, *Liponyssus bacoti*, vector of *Litomosoides carinii*, was absent from all the cotton-rats examined.

R.T.L.

(310c) Experimental infection with embryonated *Ascaris lumbricoides* (suis) eggs showed that hamsters were more resistant to lung invasion than guinea-pigs, and that the lethal dose for hamsters was twice that for guinea-pigs.

R.T.L.

(310d) The immunity produced in mice by a single infection with *Trichinella spiralis* was not affected by alcohol, but after two and four infections it was partially broken down by subsequent alcoholism. After five infections alcohol had no effect. The number of larvae recovered from the treated and the control mice was not significantly different, indicating that the administration of alcohol had not interfered with the degree of muscle invasion.

R.T.L.

311—Journal of Helminthology.

- a. PETERS, B. G., 1948.—“Potato root eelworm, D-D, and soil sterilization. I. Methods and criteria.” 22 (3/4), 117-127.
- b. PETERS, B. G., 1948.—“Potato root eelworm, D-D, and soil sterilization. II. Results for 1946.” 22 (3/4), 128-138.
- c. GOODEY, T., 1948.—“A note on the presence of phasmids on the male tails of *Anguillulina multicincta*, *A. erythrinae* and *A. robusta*.” 22 (3/4), 139-140.
- d. KUNG, C. C., 1948.—“On some new species of spirurids from terrestrial vertebrates, with notes on *Habronema mansioni*, *Physaloptera paradoxa* and *Hartertia zuluensis*.” 22 (3/4), 141-164.
- e. CRUSZ, H., 1948.—“On the transverse fission of *Cysticercus pisiformis* in experimentally infested rabbits, and the phylogenetic significance of asexual phenomena in cysticerci.” 22 (3/4), 165-178.
- f. CRUSZ, H., 1948.—“Further studies on the development of *Cysticercus fasciolaris* and *Cysticercus pisiformis*, with special reference to the growth and sclerotization of the rostellar hooks.” 22 (3/4), 179-198.
- g. SINGH, S. N., 1948.—“Studies on the helminth parasites of birds in Hyderabad State. Nematoda II.” 22 (3/4), 199-218.
- h. SINGH, S. N., 1948.—“*Gastronodius strasseni* Singh, 1934, and its affinities with *Spirocerca lupi* (Rudolphi, 1809) Chitwood, 1933.” 22 (3/4), 219-225.

(311a) Peters describes the methods used in setting up a factorial pot experiment to test the subsequent effects on potato plants of steam sterilization of soil, artificial infection with *Heterodera rostochiensis*, and injection with D-D mixture, the factors applied in that order. Of ten plant criteria used, those selected as (between them) best displaying the treatment effects were: height of tallest shoot after 45 days' growth, and weight of all tubers produced. Reasons are given for using a logarithmic transformation of eelworm counts.

B.G.P.

(311b) The results in the first year of this experiment [see preceding abstract] were that eelworm infestation had no significant effect on the potatoes; steam sterilization had the expected large beneficial effects; D-D had beneficial effects even in the absence of eelworm infection, amounting to 28% of the steaming effect in the case of yields. There was a negative

interaction between D-D and steaming. Analysis was complicated by the fact that D-D killed most of the eelworms. B.G.P.

(311c) Goodey describes and figures phasmids on the male tails of *Anguillulina multicincta*, *A. erythrinae* and *A. robusta* on which they had not previously been found, though they were known to be present on the tails of females of these species. T.G.

(311d) Kung describes six new species of spirurid nematodes and three species inquirendae. These are *Camallanus mazabukae* n.sp. and *Procamallanus brevis* n. sp. from South African bull-frogs; *C. multilineatus* n. sp. from *Rana catesbeiana* (North America); *Tanqua gigantea* n. sp. from *Python reticulatus* (East Indies) and *Naja hannah* (South-east Asia); *Ancyracanthopsis madagascariensis* n. sp. from *Dryolimnas cuvieri* (Madagascar); and *Physaloptera singhi* n. sp. doubtfully recorded from a South American monkey. The species inquirendae are a *Camallanus* from a South African bull-frog; a *Streptocara* from *Spheniscus demersus* (South Africa) and a *Physaloptera* from *Herpestes cafra* (South Africa). The female of *Hartertia zuluensis* is described for the first time, and the morphology of *Physaloptera paradoxa* Linstow, 1908 and of *Habronema mansioni* Seurat, 1914 is discussed. J.J.C.B.

(311e) Cruz gives an account of the process of transverse fission of *Cysticercus pisiformis* in the liver and body-cavity of experimentally infested rabbits. A small proportion of cysticerci undergo fission which is brought about by one or two annular constrictions resulting in the complete division of the original bladderworm into two or three parts. The posterior segments are acephalic. Histological details of various stages in this process are described. From what is known of the occasional asexual multiplication in cysticerci, the view is advanced that the cysticercus has evolved from a coenurus type of ancestor rather than from a cysticercoid. It is suggested that it is not difficult to regard such a primitive ancestral coenurus as having evolved from a cysticercoid ancestor by a process analogous to the vesiculation of an echinococcus scolex. Cruz is of opinion that *Multiceps macracantha* Clapham is a polycephalic *Cysticercus fasciolaris*. H.C.

(311f) Cruz gives further details regarding the development of the bladder-wall, scolex and rostellar hooks of *Cysticercus fasciolaris* and *C. pisiformis* in experimentally infested hosts [see also Helm. Abs., 16, No. 27f), and the developmental processes of the two forms are compared. Definite information has been obtained on the age of the various developmental stages, but there is considerable variation due to factors governed by the host-parasite relationship. The study of the development of the rostellar hooks of taeniids has been extended by the use of differential staining, histochemical tests and polarized light. It is shown that distinct chemical and optical differences exist between the cuticle and hooklets, and between the blade and base of hooks. H.C.

(311g) Singh describes two new species of avian nematodes from Hyderabad State, viz., *Acuaria kungi* n. sp. from *Saxicoloides fulicata* and *Cheilospirura hyderabadensis* n. sp. from *Accipiter nisus*. *Acuaria anthuris*, type species of the genus, is recorded from *Corvus* spp. and in view of the inadequacy of early descriptions a detailed account of this worm is given, and also of *A. skrjabini* which is newly recorded from India. A brief description is also given of a single male *Acuaria* sp. from *Pastor roseus*. *Dispharynx spiralis* is recorded for the first time from Corvidae (*Corvus macrorhynchus*); *Synhimantus laticeps* is described and recorded for the first time in India; *Echinuria horrida* is described and recorded for the first time in India, in a new host, *Halcyon smyrnensis*; and *Rusguniella brevis* is described and its affinities are discussed. J.J.C.B.

(311h) Singh gives a detailed description of *Gastronodus strasseni* which was briefly described by him in 1934 when he recorded it as a common parasite of the musk-shrew, *Crocidura caerulea*, in Hyderabad. The affinities of the genus *Gastronodus* Singh, 1934 with *Spirocerca* Railliet & Henry, 1911 are discussed. The principal characters differentiating the two genera are the presence of six pharyngeal teeth in *Castronodus*, the number of anal papillae in the male, and the subterminal anus in the female. J.J.C.B.

312—Journal of Laboratory and Clinical Medicine.

- a. HARNED, B. K., CUNNINGHAM, R. W., HALLIDAY, S., VESSEY, R. E., YUDA, N. N., CLARK, M. C., HINE, C. H., COSGROVE, R. & SUBBAROW, Y., 1948.—“Studies on the chemotherapy of filariasis. VI. Some pharmacodynamic properties of 1-diethylcarbamyl-4-methylpiperazine hydrochloride, Hetrazan.” 33 (2), 216–235.
- b. EVANDER, L. C. & DOYLE, W. M., 1948.—“Trichostrongylus infection in human beings; need of differentiation from hookworm.” 33 (7), 869–874.

(312a) Hetrazan is a colourless crystalline solid highly soluble in water, alcohol and chloroform. Large doses were tolerated with few signs of toxicity by guinea-pigs, rabbits, cats and dogs. Details are given of the effect on rats and mice and on dogs of multiple intraperitoneal doses. The drug is rapidly destroyed or excreted. R.T.L.

(312b) Helminth eggs in the faeces of a woman admitted to Niagara Sanatorium, which were diagnosed as those of *Necator americanus*, were later identified as those of *Trichostrongylus* sp. on account of their shape, larger size and advanced segmentation. A similar infection occurred in the patient's mother. As *Trichostrongylus* is not killed by the anthelmintics used for hookworm, it is important to make an accurate diagnosis in cases of suspected hookworm which prove intractable. R.T.L.

313—Journal of Parasitology.

- a. RISER, N. W., 1948.—“*Amphilina bipunctata* n.sp., a North American cestodarian.” 34 (6), 479–485.
- b. HOLLIS, E. H. & COKER, C. M., 1948.—“A trematode parasite of the genus *Clinostomum* new to the shad, *Alosa sapidissima*.” 34 (6), 493–495.
- †c. STOLL, N. R., 1948.—“Axenic cultures of *Neoeplectana glaseri* Steiner in fluid media.” 34 (6, Sect. 2), Suppl. p. 12.
- †d. ANDREWS, J. S. & JONES, D. J., 1948.—“Effect of worm parasites on the growth of and feed utilization by pigs.” 34 (6, Sect. 2), Suppl. pp. 13–14.
- †e. LEVINE, N. D., 1948.—“The destruction of horse strongyle larvae by chemicals.” 34 (6, Sect. 2), Suppl. p. 14.

(313a) *Amphilina bipunctata* n. sp. collected in Oregon from a sturgeon is distinguished from *A. japonica* in size and shape of the testes, ova, apical organ and size of the bulbous propulsorius. R.T.L.

(313b) Metacercariae of *Clinostomum marginatum* occurred in nodular protrusions of the skin of 25.8% of 519 young shad pond-reared at Fairlee, Maryland, U.S.A. R.T.L.

(313c) By using infective larvae of *Neoeplectana glaseri* from stock cultures obtained by Glaser's method, this organism has been reared in various media including nutrient broth, dilute serum and culture media of known ingredients in which casein hydrolysate supplemented or replaced the amino acids, in tubes placed upright in a shaking machine. R.T.L.

(313d) Lungworms, ascarids, *Strongyloides* and whipworms are the principal causes in pigs of retarded growth and decreased nutritional efficiency. Control pigs kept under sanitary conditions had an average of 482 worms whereas in those kept under insanitary conditions the average was 2,654 to 9,538. Growth was retarded in the latter group until they had attained a weight of 35 lb., but thereafter the difference was negligible. The contaminated lot required from 0.5 lb. to 0.8 lb. more food per lb. increase in weight than the controls. R.T.L.

(313e) Of 70 inorganic and organic compounds tested on strongyle larvae in horse faeces, mercuric chloride, potassium iodide, sodium iodide, sodium arsenite, iodoform and nicotine sulphate were lethal in a dilution of 0.1%. Those lethal in more concentrated solutions are listed. R.T.L.

† Abstract of a paper prepared for the 23rd Annual Meeting of the American Society of Parasitologists, New Orleans, Louisiana, December 5, 6, 7 and 8, 1948.

313—Journal of Parasitology (cont.)

- †f. MAYHEW, R. L., 1948.—"Phenothiazine as a larvicide against the hookworm of cattle." 34 (6, Sect. 2), Suppl. p. 14.
- †g. SPINDLER, L. A., 1948.—"Ascarids a cause of loss to the meat industry through condemnation of swine carcasses due to icterus." 34 (6, Sect. 2), Suppl. p. 14.
- †h. YOLLES, T. K., MOORE, D. V. & MELENEY, H. E., 1948.—"Post-cercarial development of *Schistosoma mansoni* in the rabbit and hamster after intraperitoneal and percutaneous infection." 34 (6, Sect. 2), Suppl. pp. 14-15.
- †i. CIORDIA, H., 1948.—"The number and morphology of the chromosomes of a digenetic trematode, *Rhopalias macracanthos* Chandler, 1932, from the opossum." 34 (6, Sect. 2), Suppl. p. 15.
- †j. GUTHRIE, J. E. & HARWOOD, P. D., 1948.—"Phenyl mercuric compounds for the removal of tapeworms from poultry." 34 (6, Sect. 2), Suppl. p. 15.
- †k. BERRY, E. G. & RUE, R. E., 1948.—"*Pomatiopsis lapidaria* (Say), an American intermediate host for *Schistosoma japonicum*." 34 (6, Sect. 2), Suppl. p. 15.
- †l. FILES, V. S. & CRAM, E. B., 1948.—"A study on the comparative susceptibility of snail vectors to strains of *Schistosoma mansoni*." 34 (6, Sect. 2), Suppl. p. 16.
- †m. AMEEL, D. J., CORT, W. W. & VAN DER WOUDE, A., 1948.—"Germinal material in rediae of two species of trematodes from *Pomatiopsis lapidaria*." 34 (6, Sect. 2), Suppl. p. 16.
- †n. STUNKARD, H. W., 1948.—"Notes on *Diphyllbothrium stemmacephalum* Cobbold, 1858." 34 (6, Sect. 2), Suppl. p. 16.

(313f) The daily administration to cattle of 1.5 gm. phenothiazine in grain concentrate for 4 to 10 days prevented the development of the eggs of *Bunostomum phlebotomum* to the infective stage in the faeces. R.T.L.

(313g) Generalized icterus in pigs due to occlusion of the bile ducts with *Ascaris* was the cause of condemnation of 8,870 out of a total of 107,767 carcasses condemned under Federal Meat Inspection in the U.S.A., between July 1946 and July 1947. R.T.L.

(313h) A very small proportion of the cercariae of *Schistosoma mansoni* injected into rabbits intraperitoneally reached the lungs and portal circulation, in contrast to the results obtained by percutaneous infection, and those reaching these situations developed more slowly. In hamsters a considerable proportion of the worms entering by either route reached the lungs and portal circulation. R.T.L.

(313i) A dose of 50 mgm. phenyl mercuric phthalate removed 96.7% of *Railletina cesticillus*, 69.6% of *Hymenolepis carioca*, 49.8% of *Davainea proglottina* and 73% of *Ascaridia* from experimentally infected birds. When combined with 0.5 gm. phenothiazine the mixture removed 97.6% of *Ascaridia* and seemed also effective against *Heterakis*. The therapeutic index for phenyl mercuric phthalate was ascertained to be 10:1. The dose of 50 mgm. may cause transient enteritis. R.T.L.

(313k) *Pomatiopsis lapidaria* which is widely distributed from central U.S.A. to New York, from Michigan to Kentucky and possibly to Louisiana, has been proved by laboratory experiment on hamsters to be a potential vector of *Schistosoma japonicum*. R.T.L.

(313l) *Schistosoma mansoni* obtained from Puerto Rico, Venezuela and Egypt, and a cross between Brazilian and Puerto Rican strains, readily infected *Australorbis glabratus* from Puerto Rico and Venezuela. Brazilian specimens of *A. glabratus* were refractive to rodent and monkey strains from Puerto Rico, Venezuela and Egypt, and susceptible only to Puerto Rican strains of human origin and to the crossed Brazilian and Puerto Rican strain. *Biomphalaria pfeifferi* was susceptible to all strains of *S. mansoni* while *B. boissyi* was resistant to all except Egyptian strains of human origin. R.T.L.

(313n) Stunkard has re-examined the type specimens of *Diphyllbothrium stemmacephalum* which were apparently partially decomposed when collected by Cobbold. The uterus has 6-9, usually 8, loops. The eggs measure 65-70 μ by 40-50 μ . Further study is needed to determine if *D. latum* and *D. stemmacephalum* are congeneric. R.T.L.

† Abstract of a paper prepared for the 23rd Annual Meeting of the American Society of Parasitologists, New Orleans, Louisiana, December 5, 6, 7 and 8, 1948.

- †o. JONES, A. W., 1948.—"Speciation in the Cestoda." 34 (6, Sect. 2), Suppl. pp. 16-17.
- †p. SADUN, E. H., 1948.—"Relation of the gonadal hormones to the natural resistance of chickens and to the growth of the nematode, *Ascaridia galli*." 34 (6, Sect. 2), Suppl. p. 18.
- †q. LUCKER, J. T. & NEUMAYER, E. M., 1948.—"The effect of some nematode infections on the leucocyte count in sheep." 34 (6, Sect. 2), Suppl. p. 19.
- †r. VAN CLEAVE, H. J., 1948.—"A detailed comparative study of cement glands in males of the Acanthocephala." 34 (6, Sect. 2), Suppl. p. 20.
- †s. MACDONALD, E. M. & SCOTT, J. A., 1948.—"Infection experiments with the filarial worms of the cotton rat." 34 (6, Sect. 2), Suppl. p. 20.
- †t. SCOTT, J. A. & MACDONALD, E. M., 1948.—"Comparative studies on the anatomical structures of the third and fourth stage larvae of the filarial worms of the cotton rat." 34 (6, Sect. 2), Suppl. pp. 20-21.
- †u. SEAMSTER, A., 1948.—"Humidity requirements of *Ascaris lumbricoides* var. *suum* ova." 34 (6, Sect. 2), Suppl. p. 21.
- †v. BANGHAM, R. V., 1948.—"Variation in distribution of Wisconsin fish parasites." 34 (6, Sect. 2), Suppl. p. 21.
- †w. BEAVER, P. C., 1948.—"Progress report on a study of methods of pinworm diagnosis." 34 (6, Sect. 2), Suppl. pp. 21-22.
- †x. KRUIDENIER, F. J., 1948.—"Metachromatic determination of mucoprotein distribution in *Paragonimus kellicotti*." 34 (6, Sect. 2), Suppl. p. 22.

(313p) The resistance to infection with *Ascaridia galli* was increased in immature male chickens by moderate doses of testosterone propionate and in immature female chickens by α -oestradiol benzoate. Injections of testosterone caused an initial increase and a later retardation while injections of oestradiol caused an initial retardation and a later increase in the mean rate of growth of the worms.

R.T.L.

(313q) No leucocytosis occurred in lambs experimentally infected with *Bunostomum*, *Haemonchus* or *Trichostrongylus*. It is pointed out that claims based exclusively on comparative counts in infected and control sheep are of doubtful value, owing to individual variations in normal animals.

R.T.L.

(313r) The cement glands of male acanthocephalans have histologically three different types. Eoacanthocephala have a single syncytial gland with giant nuclei and a separate sacculate cement reservoir. Archiacanthocephala have eight uninucleate follicles, each containing a vesicular area where cement accumulates. Palaeacanthocephala have six or fewer follicles widely divergent in external form but histologically identical; each consists of a cortical glandular zone surrounding a vesicular space for cement storage.

R.T.L.

(313u) The humidity requirements of the eggs of *Ascaris lumbricoides* var. *suum* are higher than previously reported. Ova smeared on glass and exposed to air of 80%, 85% and 95% humidity at 31.1°C. failed to develop beyond the morula stage and after eight days' exposure were desiccated beyond recovery. At a constant relative humidity of 95% at 26.7°C. and 28.9°C. they required 8% more time to complete their development than controls kept at 100% relative humidity.

R.T.L.

(313v) A parasite survey of 13,855 Wisconsin fish belonging to 85 species showed that 91% were infected with at least one species of parasite. The degree of infection and numbers of different parasites varied directly with the hardness of the water. In very soft water lakes, digenetic flukes and Acanthocephala were almost entirely absent.

R.T.L.

(313w) The cellophane-tape technique for taking perianal swabs for the diagnosis of *Enterobius vermicularis* is more efficient than the wet pestle method, although the latter takes less time at the microscope.

R.T.L.

(313x) On the basis of staining reactions, Kruidenier reports the presumptive mucin-mucoprotein distribution in *Paragonimus kellicotti* and some other trematodes. Nuclear, nucleolar, very diffuse cytoplasmic and membrane reactions indicate the need for careful technical manipulation with cautious interpretation of results. Polysaccharide-protein linkages may be involved in such metachromatic reactions more generally than reports indicate.

E.M.S.

† Abstract of a paper prepared for the 23rd Annual Meeting of the American Society of Parasitologists, New Orleans, Louisiana, December 5, 6, 7 and 8, 1948.

313—Journal of Parasitology (cont.)

- †y. RAUSCH, R., SCHILLER, E. L. & MORGAN, B. B., 1948.—"Studies on the cestode genus *Paruterina* (Cestoda : Dilepididae)." 34 (6, Sect. 2), Suppl. p. 23.
- †z. RAUSCH, R., MORGAN, B. B. & SCHILLER, E. L., 1948.—"Studies on species of *Paranoplocephala* parasitic in North American rodents (Cestoda : Anoplocephalidae)." 34 (6, Sect. 2), Suppl. p. 23.
- †ba. RAUSCH, R., SCHILLER, E. L. & MORGAN, B. B., 1948.—"Variation in *Andrya macrocephala* Douthitt, 1915 (Cestoda : Anoplocephalidae)." 34 (6, Sect. 2), Suppl. p. 23.
- †bb. BYRD, E. E. & DENTON, J. F., 1948.—"*Apororhynchus* sp. (Apororhynchidae : Acanthocephala) from North American birds." 34 (6, Sect. 2), Suppl. p. 23.
- †bc. SCOTT, J. A., 1948.—"Apparatus and methods for raising and handling tropical rat mites." 34 (6, Sect. 2), Suppl. p. 23.
- †bd. WARD, H. L., 1948.—"The chromosomes of *Macracanthorhynchus hirudinaceus*, the giant thorny-headed worm." 34 (6, Sect. 2), Suppl. p. 24.
- †be. McQUAY, Jr., R. M., 1948.—"Susceptibility of two species of Louisiana *Tropicorbis* to *Schistosoma mansoni*." 34 (6, Sect. 2), Suppl. p. 24.
- †bf. DENTON, J. F. & BYRD, E. E., 1948.—"Dicrocoeliid trematodes of North American birds." 34 (6, Sect. 2), Suppl. p. 24.
- †bg. OFFUTT, E. P., 1948.—"An improved ruling for the ocular disc of special usefulness in parasitology." 34 (6, Sect. 2), Suppl. pp. 24-25.
- †bh. WOODHEAD, A. E., 1948.—"Some new concepts in the embryology of nematodes." 34 (6, Sect. 2), Suppl. p. 25.
- †bi. BACIGALUPO, J. & RIVERO, E., 1948.—"Vaginal sphincter, new organ of *Echinococcus granulosus*." 34 (6, Sect. 2), Suppl. p. 25.
- †bj. LINCICOME, D. R., THIEDE, W. H. & CARPENTER, E. H., 1948.—"Incidence of *Endamoeba histolytica* and other parasites of man in Wisconsin. I. Preliminary report on a group of college students." 34 (6, Sect. 2), Suppl. p. 25.
- †bk. LINCICOME, D. R., 1948.—"Observations on the life cycle of *Neoechinorhynchus emydis*, an acanthocephalan parasite of turtles." 34 (6, Sect. 2), Suppl. pp. 25-26.

(313y) Two unnamed species of *Paruterina* occur in the rock wren and the green-tailed towhee. Cysticercoids of *P. candelabraria* were obtained experimentally in the liver of laboratory mice. R.T.L.

(313bb) An unnamed acanthocephalan of a type not previously reported from North American birds is tentatively placed in *Apororhynchus*. R.T.L.

(313bc) An apparatus for raising tropical rat-mites and infecting them with filarial worms of the cotton-rat was demonstrated but is not described. R.T.L.

(313bd) In *Macracanthorhynchus hirudinaceus* there are constantly two sets of 3 large chromosomes, making the diploid complement 6. In the male the two long chromosomes are heteromorphic. R.T.L.

(313be) *Tropicorbis havanensis* collected from Baton Rouge, Louisiana, and established in the laboratory, was experimentally infected with *Schistosoma mansoni* of Puerto Rican origin. A species of *Tropicorbis* from Audubon Park, New Orleans, could not be infected. R.T.L.

(313bf) Of 700 wild birds collected in the U.S.A., representing 120 species, 28 harboured 20 dicrocoeliid species belonging to 8 genera. Twelve of these 20 species are not yet described. R.T.L.

(313bi) *Echinococcus granulosus* possesses a muscular vaginal sphincter similar to that of *Taenia saginata*. R.T.L.

(313bk) When laboratory-reared ostracods, *Cyprinotus incongruens*, were given eggs of *Neoechinorhynchus emydis*, hatched larvae were found in their gut contents in 24 hours, and swollen larvae typical of early developmental forms in other arthropods were observed up to five days after exposure. R.T.L.

† Abstract of a paper prepared for the 23rd Annual Meeting of the American Society of Parasitologists, New Orleans, Louisiana, December 5, 6, 7 and 8, 1948.

- †bl. LINCICOME, D. R., 1948.—"Distribution of *Leptorhynchoides thecatus*, a common acanthocephalan parasitic in fishes." 34 (6, Sect. 2), Suppl. p. 26.
- †bm. SHORB, D. A., 1948.—"Experimental infections of pigs with *Oesophagostomum dentatum* and *O. longicaudum*." 34 (6, Sect. 2), Suppl. p. 26.
- †bn. PIPKIN, A. C., 1948.—"The diagnosis of taeniasis by perianal swab." 34 (6, Sect. 2), Suppl. p. 27.
- †bo. AZAR, J. E., PIPKIN, A. C. & GARABEDIAN, G. A., 1948.—"An intensive treatment regimen of vesical schistosomiasis with fuadin." 34 (6, Sect. 2), Suppl. pp. 27-28.
- †bp. PIPKIN, A. C. & RIZK, E., 1948.—"Treatment of taeniasis saginata with atabrine." 34 (6, Sect. 2), Suppl. p. 28.
- †bq. WALTON, A. C., 1948.—"Parasites of the Ranidae (Amphibia). XI." 34 (6, Sect. 2), Suppl. p. 28.
- †br. WALTON, A. C., 1948.—"Parasites of the Ranidae (Amphibia). XII." 34 (6, Sect. 2), Suppl. pp. 28-29.
- †bs. WALTON, A. C., 1948.—"Parasites of the Ranidae (Amphibia). XIII." 34 (6, Sect. 2), Suppl. p. 29.
- †bt. TODD, A. C. & HANSEN, M. F., 1948.—"Comparative fertility of strongylid eggs passed by horses." 34 (6, Sect. 2), Suppl. p. 29.
- †bu. SHORT, R. B., 1948.—"Inter-generic crosses among schistosomes (Trematoda: Schistosomatidae)." 34 (6, Sect. 2), Suppl. p. 30.

(313bl) There are 83 American hosts of *Leptorhynchoides thecatus*, but Rees' (1945) record for the Welsh coast is considered erroneous. Examination of the specimens shows that they belong to a species of *Echinorhynchus*. R.T.L.

(313bm) Twenty hours after pigs were orally infected with large doses of infective larvae of *Oesophagostomum dentatum* and of *O. longicaudum*, encysted larvae were present in the mucosa and submucosa of the caecum and large intestine. The mucosa was eroded and haemorrhagic. After six to ten days, fourth-stage larvae had emerged from the nodules into the intestinal lumen. In heavy infections there were hypertrophy of the regional lymph nodes, marked oedema of the meso-colon, and thickening and widespread haemorrhages in the mucosa, which was covered by a diphtheritic membrane. The severest cases terminated fatally. The growth of those which survived heavy infections was usually retarded. R.T.L.

(313bn) NIH swab examinations of 127 schoolchildren near Beirut gave 90% positive for eggs of *Taenia saginata*, and 96.1% for *Enterobius vermicularis*. The perianal swab is evidently as efficient a means of diagnosis of tapeworm as of pinworm. R.T.L.

(313bo) The intensive treatment of vesical schistosomiasis in Syrian villagers by nine intramuscular injections, one every three hours daily for three days, with a total of 34 c.c. of a 6.3% solution of foudadin for adults and half the total dose for schoolboys, resulted in temporary cessation of egg production in 50% of the cases, and in 60-70% of the cases in a complete cessation of miracidial hatching. R.T.L.

(313bp) The atabrine treatment of Neghme & Faiguenbaum for *Taenia saginata* was tried on 42 infected Lebanese schoolchildren. Only seven passed complete strobilae. Toxic manifestations, nausea, headache and vomiting rendered the treatment unsuitable for out-patients. R.T.L.

(313bt) In a stud where there was a system of periodic low-level dosing with 2 gm. phenothiazine in the daily feed for two-weekly periods, with an interval of one week, 69.2% of the strongyle eggs passed were infertile, whereas in other studs only 3.9% of the eggs were infertile. R.T.L.

(313bu) Short produces experimental evidence that *Schistosoma mansoni* males paired with *Schistosomatium douthitti* females and vice versa produce respectively typical *S. douthitti* and *S. mansoni* eggs. R.T.L.

† Abstract of a paper prepared for the 23rd Annual Meeting of the American Society of Parasitologists, New Orleans, Louisiana, December 5, 6, 7 and 8, 1948.

313—Journal of Parasitology (cont.)

- †bv. SHORT, R. B., 1948.—"Infective uniparental miracidia of *Schistosomatum douthitti* (Trematoda: Schistosomatidae)." 34 (6, Sect. 2), Suppl. p. 30.
- †bw. SWARTZWELDER, J. C. & WICKER, H. E., 1948.—"Preliminary drug trials to determine anthelmintic activity against *Trichocephalus vulpis* in dogs." 34 (6, Sect. 2), Suppl. p. 30.
- †bx. LARSH, Jr., J. E., 1948.—"The role of certain vitamins in alcoholic debilitation of mice infected with *Hymenolepis*." 34 (6, Sect. 2), Suppl. p. 31.
- †by. HENDRICKS, J. R., 1948.—"Comparing the immune response of young and old mice to infections with 50 and 300 larvae of *Trichinella spiralis*." 34 (6, Sect. 2), Suppl. pp. 31-32.
- †bz. ACKERT, J. E. & TUGWELL, R. L., 1948.—"Tissue phase of *Ascaridia galli* life cycle elucidated by artificial digestion apparatus." 34 (6, Sect. 2), Suppl. p. 32.
- †ca. BONILLA-NAAR, A. & GOMEZ-VARGAS, M., 1948.—"AEX and 'Faust Simplificado' (Bonilla-Naar), two new methods for investigating intestinal parasitism." 34 (6, Sect. 2), Suppl. p. 32.
- †cb. FERGUSON, M. S., 1948.—"Culture experiments with *Heterodera marioni*." 34 (6, Sect. 2), Suppl. pp. 32-33.
- †cc. HAWKINS, P. A., 1948.—"*Moniezia expansa* infections in sheep." 34 (6, Sect. 2), Suppl. p. 33.

(313bv) *Limnaea palustris* and *L. stagnalis* were infected by miracidia from *Peromyscus maniculatus* harbouring only female *Schistosomatum douthitti*. Mice infected with cercariae from four of these snails developed male worms only. Cercariae from a fifth snail yielded only normal *Schistosomatum douthitti* females which laid eggs containing living miracidia. R.T.L.

(313bw) Only arecolin hydrobromide, "Disparicida" Kuba and gentian violet, among several drugs tested for their anthelmintic effect on *Trichuris vulpis* in dogs, produced any significant reduction in egg-counts. Although arecolin hydrobromide gave the most constant reduction, it produced irritation of the bowel in the doses usually prescribed. R.T.L.

(313bx) Vitamin B-complex supplements had no effect in preventing alcoholic debilitation in mice infected with *Hymenolepis*. Where vitamin A, C and D supplements were given, there were significantly fewer parasites. R.T.L.

(313by) In mice two months old and others six months old given 50 *Trichinella* larvae, 57% and 28.4% respectively had developed to adults after seven days. But from a single dose with 300 larvae the results were 35% and 26.8% respectively. It is suggested that failure to note age resistance in previous work may have been due to size of the infecting dose. A second dose of 300 larvae gave approximately the same results, but one of 50 larvae showed a reduction of more than 50% in the number of adults recovered subsequently. R.T.L.

(313bz) By digesting the small intestine of chickens parasitized by *Ascaridia galli* after flushing the gut free of worms, Ackert & Tugwell found young worms within the mucous membrane from the 3rd to the 24th day after infection. R.T.L.

(313ca) Faust's technique modified by comminuting the faeces directly in zinc sulphate at sp. gr. 1.18 was inferior to Loughlin & Stoll's AEX modification of the Telemann technique and to that of Willis-Molloy in revealing helminth eggs, especially those of whip-worm. Direct smears with Lugol's iodine demonstrated 50-70% of the nematode infections. R.T.L.

(313cb) *Heterodera marioni* has been followed through its complete life-cycle in about six weeks in tomato plant and root cultures on slants of semi-solid media free from micro-organisms. By serial transfers, four generations were carried through in these plant cultures. R.T.L.

(313cc) *Moniezia expansa* eggs and proglottides appeared in the droppings 25-35 days after lambs had been placed on pasture in May. This indicates that the infected oribatid mites had overwintered from October to May. Uninfected lambs accompanying infected ewes which were placed on uninfected pasture late in spring remained free from infection until late August. These new infections during the latter part of the summer apparently resulted from pasture contamination during the early summer grazing season. R.T.L.

† Abstract of a paper prepared for the 23rd Annual Meeting of the American Society of Parasitologists, New Orleans, Louisiana, December 5, 6, 7 and 8, 1948.

- †cd. McMULLEN, D. B., 1948.—"Seasonal studies on *Oncomelania nosophora* and the control of *Schistosoma japonicum* in Japan." 34 (6, Sect. 2), Suppl. p. 33.
- †ce. McMULLEN, D. B., ISHII, N. & MITOMA, Y., 1948.—"Results of screening tests on chemicals as molluscicides." 34 (6, Sect. 2), Suppl. p. 33.
- †cf. McMULLEN, D. B., 1948.—"Seasonal studies of *Schistosoma japonicum* infections in the intermediate host, *Oncomelania nosophora*." 34 (6, Sect. 2), Suppl. pp. 33-34.
- †cg. HUNTER, III, G. W., RITCHIE, L. S., NAGANO, K. & ISHII, N., 1948.—"Parasitological studies on the Far East. II. An epidemiological survey of Fukui Prefecture, Honshu, Japan." 34 (6, Sect. 2), Suppl. pp. 34-35.
- †ch. RITCHIE, L. S., HUNTER, III, G. W., PAN, C., SZEWCZAK, J. T. & ISHII, N., 1948.—"Parasitological studies in the Far East. III. An epidemiological survey of Aomori Prefecture, Honshu, Japan." 34 (6, Sect. 2), Suppl. p. 35.
- †ci. HUNTER, III, G. W., RITCHIE, L. S., KAUFMAN, E. H., PAN, C., SZEWCZAK, J. T., YOKOGAWA, M. & ISHII, N., 1948.—"Parasitological studies in the Far East. IV. An epidemiological survey in Yamanashi Prefecture, Honshu, Japan." 34 (6, Sect. 2), Suppl. p. 35.
- †cj. WARD, J. W. & REEDER, R. C., 1948.—"Incidence of *Dirofilaria immitis*, the dog heart worm, in dogs from Mississippi." 34 (6, Sect. 2), Suppl. pp. 35-36.

(313cd) The optimum periods for the application of molluscicides for the control of the vector of *Schistosoma japonicum* in Yamanashi Prefecture of Japan were (i) after hibernation, i.e. from 1st April to 1st June and (ii) after the water has been turned out of the irrigation ditches, i.e. from 25th September to 10th November. During these two periods, the molluscs actively move about on the moist soil and are susceptible to chemical dusts and sprays.

R.T.L.

(313ce) Of 32 compounds and mixtures showing toxicity in laboratory and in field tests to *Oncomelania nosophora*, the most effective were sodium pentachlorophenate, dinitro-*o*-cyclohexylphenol and its dicyclohexylamine salt. 50 gm. of these chemicals per 100 feet of ditch 2-3 feet wide gave excellent control.

R.T.L.

(313cf) Examinations of *Oncomelania nosophora* in the Yamanashi Prefecture, Japan, showed that only immature and young mature infections with *Schistosoma japonicum* were present in October, just before hibernation began, and remained until April when hibernation had terminated. The peak of cercarial production was reached in the early summer when people worked in the rice fields, and continued until early September when the water was highly infective but work in the fields was fortunately at its minimum.

R.T.L.

(313cg) A faeces survey of 1,296 persons in the Fukui Prefecture, Japan, gave an incidence of *Ascaris* 80.9%, *Trichuris* 63.7%, hookworm 12.9% and *Trichostrongylus* 3.5%. *Schistosomiasis japonica* and its vector *Oncomelania nosophora* were absent.

R.T.L.

(313ch) In the Aomori Prefecture, Japan, the helminth incidence among 1,548 persons examined was 92.1% in Aomori City and rural villages contiguous with Ominato, Hirosaki and Hachinoe. *Ascaris* averaged 80.9%, whipworm 63.4%, hookworm 38.4% and *Enterobius* 10%, but considerable local variations occurred. In two villages near Hirosaki, the hookworm rate was 66.8% and 82.6% respectively.

R.T.L.

(313ci) In the Yamanashi Prefecture, Japan, 99.5% of 3,055 individuals examined had a helminth infection. Whipworm occurred in 91.6%, *Ascaris* in 88.8%, hookworm in 71.8%, *Trichostrongylus* in 44.4%, *Schistosoma japonicum* in 32% and *Enterobius* in 36.9%. At Futakawa *S. japonicum* occurred in 64.6% and at Sancho in 65.9%, while in Kofu City and Hikawa it was 3.4% and 0.2% respectively.

R.T.L.

(313cj) Of 31 apparently healthy dogs from Mississippi, 10 were found to harbour adult *Dirofilaria immitis* in the heart. The maximum number of adult worms collected from one animal was 38. One dog out of three examined showed microfilariae in the fresh peripheral venous blood and one out of 18 in the serum from 3 c.c. clotted blood. The microfilariae in serum survived for nine days at 12°C.

R.T.L.

† Abstract of a paper prepared for the 23rd Annual Meeting of the American Society of Parasitologists, New Orleans, Louisiana, December 5, 6, 7 and 8, 1948.

313—Journal of Parasitology (cont.)

- †ck. WARD, J. W., 1948.—“Quantitative studies on nematode parasites of horses and mules.” 34 (6, Sect. 2), Suppl. p. 36.
- †cl. WALKER, J. H., 1948.—“The incidence of trichinosis in Alabama as indicated by the examination of the diaphragm and three other muscles from 300 autopsies.” 34 (6, Sect. 2), Suppl. pp. 36–37.
- †cm. SEITNER, P. G., 1948.—“Observations on the life history of *Allocreadium ictaluri* Pearse.” 34 (6, Sect. 2), Suppl. p. 37.
- †cn. HERMAN, C. M., REEVES, W. C. & McCLURE, H. E., 1948.—“Blood parasites of birds from Kern County, California.” 34 (6, Sect. 2), Suppl. pp. 37–38.

(313ck) At autopsies of 24 equines, 14 harboured *Trichonema* spp., while *Strongylus equinus*, *S. edentatus*, *Triodontophorus serratus* and *Gongylonema* spp. were each found in six, and *Triodontophorus minor*, *Cylicocyclus nassatus*, *Oxyuris equi*, *Setaria equi* and *Habronema* spp. each in two. Animals twenty years old and over had 1,106 to 5,249 cylicostomes each. These results closely coincided with those found by faecal examination of 65 other horses, except in the case of *Strongyloides* where the number of eggs was more in proportion to the number of adults. R.T.L.

(313cl) *Trichinella* cysts occurred in 36.3% of 300 human autopsies in Alabama, in an urban population of low economic status. The examination was made both by microscopic compression and by digestion methods. R.T.L.

(313cm) Ophthalmocercariae in Unionidae in Indiana, after experimental development in the catfish, proved to belong to *Allocreadium ictaluri*. R.T.L.

(313cn) Among the blood parasites of wild birds in the Bakersfield area of Kern County, California, some (unidentified) microfilariae occurred. R.T.L.

314—Journal of the Royal Egyptian Medical Association.

- a. ABDOL, S. & GRACE, H. K., 1948.—“Observations on the late results of splenectomy for bilharzial splenomegaly.” 31 (10), 786–791.

(314a) Splenomegaly is very prevalent in Kafr-Abu-Naser on the north-eastern border of the Dakahlia Province of Egypt. Of 344 individuals between 8 and 20 years old, 78% were bilharzia cases: of these 134 had *Schistosoma mansoni*, 59 had *S. haematobium* and 76 had a mixed infection. 100 cases, i.e. 29%, had splenomegaly: 11 of these were non-bilharzial and 89 were bilharzial in origin. Of these 89 bilharzial cases, 84 were associated with *S. mansoni* infection and 5 with mixed bilharzial infections. It is important to treat with tartar emetic early cases of bilharzial splenic enlargement, cases of reinfected splenectomy, and every case of bilharzial splenomegaly before operation. The results of splenectomy in 42 cases are recorded. R.T.L.

315—Journal of the Royal Faculty of Medicine of Iraq.

- a. WATSON, J. M., 1948.—“Studies on bilharziasis in Iraq. Part I. Present status of the subject.” 12 (4/5), 120–134.

(315a) Urinary bilharziasis is widespread and serious throughout Iraq, except in the extreme north, and is likely to increase as a result of irrigation development schemes. Previous reports are summarized. Less than 1% of the in-patients and out-patients in the State hospitals are being treated for bilharziasis, although 100% of in-patients in the surgical wards of Nasriyah State Hospital had haematuria and 21.7% of all the in-patients there showed eggs in routine urine examinations. The main factor in the spread of the infection is the wide distribution of *Bulinus truncatus*; this disappears in the cold weather from the end of November to the middle of May and is most abundant in the late summer. The annual floods leave overflow pools and subsoil water pools in which the molluscs breed. This seasonal and localized occurrence of the vector suggests that anti-snail measures may achieve considerable success. R.T.L.

† Abstract of a paper prepared for the 23rd Annual Meeting of the American Society of Parasitologists, New Orleans, Louisiana, December 5, 6, 7 and 8, 1948.

316—Journal of the Royal Horticultural Society.

- a. WILSON, G. Fox, 1948.—“The bulb and stem eelworm in relation to garden plants.” 73 (10), 335-345.

(316a) Fox Wilson discusses the bulb and stem eelworm, *Anguillulina dipsaci*, as a pest of garden plants. Symptoms of disease are described in the case of attack on hyacinth, narcissus, oenothera, phlox, primulas, saxifrages, onion and potato. The significance of biological races of the parasite is pointed out, and the means of its dispersal are dealt with under (i) seed transmission, (ii) plant transmission, (iii) dispersal by soil, (iv) dispersal by compost or manure, and (v) dispersal by drainage water. Control measures are discussed and the importance of weeds as reservoir hosts is emphasized. T.G.

317—Journal of the South African Veterinary Medical Association.

- a. COOPER, V., 1948.—“Some veterinary problems of the Cape western area.” 19 (4), 146-150.

(317a) Only during the past three years has it been realized that helminth infections of sheep are responsible for enormous losses in the dry North Western Cape area which, covering 170,000 square miles, occupies one-third of the Union of South Africa. R.T.L.

318—Kongelige Norske Videnskabers Selskabs Forhandlinger.

- a. ALLGÉN, C. A., 1948.—“Zur Kenntnis Norwegischer Nematoden XIII. Ueber zwei weitere freilebende Nematoden von der Insel Storfosen.” 20 (16), 59-61.
b. ALLGÉN, C. A., 1948.—“Zur Kenntnis Norwegischer Nematoden XIV. Ueber eine neue Art der Gattung *Pseudonchus* Cobb, *P. donsi* n.sp. von der Strandzone Norwegens.” 20 (30), 120-121.

(318a) Allgén describes and figures two new nematodes collected on the island of Storfosen, namely *Bathylaimus latilaimus* n.sp. based on one larval specimen, and *Theristus donsi* n.sp. based on a single male specimen. T.G.

(318b) In a sample of mud taken from the beach zone at Rorvik, Allgén found the anterior half of a cyatholaimid nematode which he places in the genus *Pseudonchus* Cobb as a new species, namely *P. donsi* n.sp. T.G.

319—Lancet.

- a. NAJI, K., 1948.—“Intestinal obstruction due to ascariasis. Report of a case.” Year 1948, 2 (6526), 495.
b. MCGILL, R. J., 1948.—“Cysticercosis resembling myopathy.” Year 1948, 2 (6532), 728-730.
c. HAWKING, F., SEWELL, P. & THURSTON, J. P., 1948.—“Mode of action of hetrazan in filariasis.” Year 1948, 2 (6532), 730-731.

(319b) [This article also appeared in *Indian J. med. Sci.*, 1947, 1 (3), 109-114. For abstract see *Helm. Abs.*, 16, No. 235a.]

(319c) Microfilariae of *Litomosoides carinii* remain alive in a medium of serum, Ringer's solution and glucose containing Hetrazan in concentrations up to 100 mg. per 100 ml. and in serum from rats treated with large doses of Hetrazan $\frac{1}{2}$ to 2 hours before bleeding. Intrapleural injection of Hetrazan has no striking effect on the microfilariae in the pleural cavity. Observations are cited in support of the view that Hetrazan and its metabolic products opsonize the microfilariae so that they are seized by phagocytes and removed from the circulation. R.T.L.

320—Leaflet. Department of Agriculture for Scotland.

- a. ANON., 1948.—“Strawberry diseases.” No. 79, 6 pp.

(320a) This leaflet is chiefly devoted to “red core” and virus diseases. Bud eelworm [*Aphelenchoides fragariae*—a pest, not a disease—may cause a condition which can be confused with some of the effects of virus disease. No runners should be taken from plants showing abnormalities as the pest is transmitted in the runners. M.T.F.

321—Lyon Chirurgical.

- a. SABADINI, L., 1948.—“Les kystes rétro-vésico-prostatiques. (Kystes hydatiques du bassin.)” 43 (2), 179-194. [English summary p. 194.]
 b. ASTERIADES, T., 1948.—“Sur l'échinococcose des os du bassin.” 43 (3), 353-354.

322—Medical Journal of Malaya.

- a. DA SILVA, L. S., 1948.—“Ascariasis and its dangers.” 3 (1), 41-48.

(322a) Of the children admitted to the General Hospital, Singapore, 25% harboured *Ascaris* and 13% had hookworms. 1,350 autopsies showed that 73 children had died from ascariasis or complications directly or indirectly attributed to this infection. Acute abdomen, the most alarming complication, occurred in 14 of the patients. A tabular statement sets out the age, sex, cause of death and remarks on each of the 73 fatal cases. R.T.L.

323—Medisch Maandblad. Batavia.

- a. BONNE, C., BRAS, G. & LIE KIAN JOE, 1948.—“Five human echinostomes in the Malayan Archipelago.” No. 23, pp. 456-465.
 b. OEY OEN BIE, 1948.—“Een geval van ileus door Ascariden veroorzaakt.” No. 24, pp. 488-489. [English summary p. 489.]

(323a) *Euparyphium ilocanum*, *E. malayanum*, *Echinoparyphium recurvatum*, *Echinostoma revolutum* and *E. lindoensis* have been recorded from man in the Malayan Archipelago. All except the last-named are merely incidental parasites which normally infest rats and birds. As human beings acquire infections by eating snails and mussels which contain the metacercariae, cases are common only in poor districts or in insane persons. A case of *Euparyphium malayanum* from northern Sumatra and three cases of *Echinostoma revolutum* from Java are now reported. The life-cycle of *Euparyphium malayanum* is still unknown. The first intermediary of the four other echinostomes is *Anisus convexiusculus*. Among the second intermediaries are *A. convexiusculus*, *Viviparus javanicus*, *Limnaea rubiginosa* and *Pila conica*. Mussels, *Corbicula* spp., are also second intermediaries for *Echinostoma revolutum* and *E. lindoensis*. *Corbicula lindoensis* is an important article of diet of the inhabitants of the villages around Lake Lindoe, among whom *Echinostoma lindoensis* is a common infection. R.T.L.

324—Medizinische Klinik.

- a. ERHARDT, A., 1948.—“Überblick über die medikamentöse Therapie der Askarirose.” 43 (4), 114-117.
 *b. TEUSCH, W., 1948.—“Der *Trichocephalus dispar* in der Differentialdiagnose.” 43 (15), 431.
 *c. SCHNEIDER, J., 1948.—“Kritischer Beitrag zur Behandlung der Oxyuriasis.” 43 (17), 493.
 *d. SCHUBERT, R., 1948.—“Therapie bei peroralem Askaridenabgang.” 43 (18), 521.

(324a) The biology and the methods of treatment of ascariasis are briefly reviewed in the light of availability of anthelmintics in Germany at the present time. The anthelmintics considered include Helminal (unobtainable), santonin and oil of chenopodium (very scarce), synthetic ascaridol, helenin (made in Germany from radix helenii), and American hexylresorcinol. E.M.S.

325—Medycyna Weterynaryjna.

- a. KOZAR, Z., 1948.—“Immunologiczne pokrewieństwo *Ascaris lumbricoides* ludzi i świń badane in vitro za pomocą żywych larw.” 4 (8), 475-480. [In Polish: English summary p. 480.]
 b. WILCZYŃSKI, M., 1948.—“Pasożytnicze zapalenie spojówek u bydła.” 4 (10), 608-609. [In Polish: English summary p. 609.]
 c. STEFAŃSKI, W., 1948.—“Zadania parazytologii polskiej w zwalczaniu chorób inwazyjnych zwierząt domowych.” 4 (12), 764-767. [In Polish: English summary p. 767.]

(325a) Kozar tested *in vitro* the microprecipitation method on *Ascaris lumbricoides* larvae of human and pig strains. In sera from white mice and guinea-pigs experimentally infected with both strains, and from naturally infected human beings, precipitates were produced around the natural openings of the larvae. Antibodies were found in the sera of

infected mice and guinea-pigs seven days after infestation. The larvae of both human and pig strains produced precipitates with sera of animals infected by both strains as well as with serum of a human infestation. According to the author this proves that both strains of *A. lumbricoides* are identical from the immunological point of view. C.R.

(325b) Wilczynski found cattle in the Bialystok district during the summer infested with *Thelazia* and having symptoms of conjunctivitis and keratitis. He reports good results from treatment with 3% boracic acid. C.R.

(325c) Stefanski in this paper reviews the importance of problems confronting Polish parasitologists. He thinks that the major helminthic problems of the greatest economic importance are the control of liver-fluke in cattle and sheep, and of helminths in horses, pigs and sheep. He advocates the training of more parasitologists by means of Government grants. C.R.

326—Memorias do Instituto Oswaldo Cruz.

- a. FREITAS, J. F. TEIXEIRA DE & LENT H., 1948.—“Spiruroidea parasitos de Rheiformes (Nematoda).” Ano 1947, 45 (4), 743-760.
- b. LENT, H. & FREITAS, J. F. TEIXEIRA DE, 1948.—“Uma coleção de Nematódeos, parasitos de vertebrados, do Museu de Historia Natural de Montevideo.” 46 (1), 1-71.

(326a) A new genus *Vaznema* is created for *Spirura zschokkei* (Railliet & Henry, 1911) which is redescribed. It was found in the submucosa of the proventriculus of *Rhea americana intermedia*. *Vaznema* n.g. is nearly related to *Metabronema*. From the same host, *Sicarius uncinipenis* (Leidy, 1891) nec Molin, 1860 is renamed *S. waltoni* n.sp. R.T.L.

(326b) A collection of nematodes in the Natural History Museum of Montevideo is first identified and classified under the names of the host animals. In the following systematic section, these names are new: *Pseudoalaeuris caudatus* n.sp. and *P. vogelsangi* n.sp. from *Iguana tuberculata*, *Cosmocerca chilensis* n.sp. from *Rhinoderma darwini*, *C. uruguayensis* n.sp. from *Ceratophrys americana*, *Aplectana chilensis* n.sp. from *Rhinoderma darwini*, *A. meridionalis* n.sp. from *Ceratophrys americana*, *Contracaecum corderoi* n.sp. from *Arctocephalus australis*, *C. plagiaticium* n.sp. from *Nycticorax nycticorax naevius*, *Proleptus sordidus* n.sp. from *Rhinobatos percellens*, and *Aprocta proctata* n.sp. from *Speotyto cunicularia*. Descriptions are given of these, and very full accounts of some known species including *Amplicaeum alatum*, *Porrocaecum secundum*, *Contracaecum pelagicum* and *Hedruris scabra*. E.M.S.

327—Minerva Medica. Torino.

- a. COVA, P., 1948.—“L'ascaridiosi intestinale. Importanza clinica del suo riconoscimento radiologico.” Anno 39, 1 (5), 144-147.

328—Monthly Bulletin. Indian Coffee Board.

- a. THOMAS, K. M., 1948.—“Short notes on some diseases and pests of coffee.” 12 (6), 5-6.
- (328a) In parts of Coorg and Mysore *Anguillulina pratensis* causes a high mortality in supply coffee plants 1-5 years old. While all species of coffee may become infected *Coffea robusta* is relatively resistant. The earliest symptoms are yellowing of the leaves, a loss of the young primaries and stunting of the shoot. The plants gradually wilt and die. Healthy plants are attacked in wet weather when eggs and larvae are liberated after decay of infected roots. R.T.L.

329—Natural History. New York.

- a. BERNSTEIN, J., 1948.—“The fiery serpent.” [*Dracunculus medinensis*.] 57 (8), 368-370.

330—Nature. London.

- a. DALES, R. P., 1948.—“Occurrence of *Acanthocephalus ranae* Schrank. in Great Britain.” [Correspondence.] 162 (4130), 1001.

(330a) Twenty-seven specimens of *Acanthocephalus* [= *Echinorhynchus*] *ranae* were found in a specimen of *Rana temporaria* brought from either Cornwall or Surrey. The species has been noted in Britain only twice previously. E.M.S.

331—Nederlandsch Tijdschrift voor Geneeskunde.

- a. SEKHUIS, G. A., 1948.—“Anaemie door phenothiazine.” 92 (28), 2100-2101.
- b. HERMANS, A. G. J., 1948.—“Onderhuidse gezwellen, veroorzaakt door *Filaria volvulus* (*Oncocerca volvulus*).” 92 (35), 2631-2638. [English, French & German summaries p. 2638.]
- c. BEEKHUIS, H. J., 1948.—“Een geval van *Ascaris lumbricoides* in de tuba.” 92 (36), 2756-2758. [English, French & German summaries p. 2758.]

(331a) Children aged 9, 7, 5, $3\frac{1}{2}$ and $2\frac{1}{2}$ years were treated for *Enterobius* with 7.5, 5.0, 4.5, 2.5 and 2.0 gm. granulated phenothiazine respectively in six equal doses over two days. They developed anaemia and were at times cyanosed. Six days later the haemoglobin content in the four elder children was 69%, 75%, 60% and 65% respectively. The child $3\frac{1}{2}$ years old became progressively weaker and more anaemic, and began to vomit four days later. The next day her haemoglobin content was 40%, the erythrocytes numbered 2,120,000, leucocytes 9,500 and the sedimentation rate was 60/20 mm. Two adults who received 15 gm. each did not develop anaemia. P.L.I.E.R.

332—New England Journal of Medicine.

- a. KRANES, A. & WYMAN, S. M., 1948.—“Case 34312.” [Echinococcus cyst.] 239 (5), 205-207.

333—New York State Journal of Medicine.

- a. HAYWARD, W. G., 1948.—“Schistosomiasis.” 48 (7), 796-798.

334—New Zealand Journal of Agriculture.

- a. McMEEKAN, C. P., 1948.—“Ruakura research shows how to rear well-grown dairy heifers.” 77 (2), 138-141.
- b. HOWSE, A. C., 1948.—“Internal parasites which infest poultry.” 77 (5), 481-482.
- c. GILLARD, S. O., 1948.—“Chemical disinfection of glasshouse soil for tomato crops.” 77 (5), 500-501.
- d. WHITTEN, L. K., 1948.—“Prevention of worms in lambs and hoggets.” 77 (6), 576.

(334a) The essentials for the development of well grown weaners in North Island New Zealand are (i) rotation around the same pastures as are used by the milking herd before grazing by the herd, (ii) regular and frequent shifts preferably every one or two days, (iii) rotation from an early age—at least by the time the calves are one month old. At the Ruakura Research Station the herd remains in one field for one to two days, or an average of three milkings per paddock at each grazing period. The calves precede the cows round the same fields but approximately midway between successive cow grazings. In contrast with those on the set-stocked management the animals required no anthelmintic drenching. R.T.L.

(334c) Chloropicrin, D-D mixture and Iscobrome I and II, applied at the rate of 3 ml. per sq. ft., showed promise in controlling *Heterodera marioni* in tomatoes in greenhouses in New Zealand. Chloropicrin, which appeared to increase plant vigour also, cost about £4 14s. 6d. per 1,000 sq. ft. None of the plants were found to be infected with eelworm, but after D-D mixture 10% were affected with verticillium wilt. R.T.L.

335—Nordisk Medicin.

- a. WOHLFART, G., 1948.—“Trikinos med 30-årigt förlopp.” 38 (20), 997-999.

336—Norsk Veterinaer-Tidsskrift.

- a. NAERLAND, G., 1948.—“Kobberforgiftning hos sau.” 60 (5), 161-185. [English summary pp. 183-184.]

(336a) A case is reported of acute poisoning in a sheep given an overdose of copper sulphate. A warning is given against continuous administration of copper sulphate as an anthelmintic for sheep. E.M.S.

337—North American Veterinarian.

- a. ALLEN, R. W. & JONGELING, C. H., 1948.—“The efficacy of lead arsenate in removing *Moniezia* from lambs.” 29 (10), 645-648.
- b. MOSS, L. C., 1948.—“Heartworm in dogs.” [Questions & Answers.] 29 (11), 726.

(337a) A commercial spray grade of lead arsenate in doses of 1 gm. was found to be 100% effective against *Moniezia* in sheep. Of the 23 lambs treated one died 7 days later, possibly due to the drug. Data are included on the amounts of lead and arsenic found in the tissues of seven treated lambs. J.W.G.L.

338—Pacific Science. Honolulu.

- a. LINCICOME, D. R. & MCCONNAUGHEY, B. H., 1948.—“A new nematode of the genus *Pseudophysaloptera* from an Okinawan shrew.” 2 (4), 239-242.

(338a) *Pseudophysaloptera riukiwana* n. sp. from *Suncus murinus riukiuanus* is distinguished from *P. soricina* by the pattern of the male genital papillae, of which there are six lateral post-anals and two lateral pre-anals on either side and a single large ventromedian pre-anal. Spicules were apparently absent in all the males examined. R.T.L.

339—Phytopathology.

- a. BAINES, R. C., CLARKE, O. F. & BITTERS, W. P., 1948.—“Susceptibility of some citrus species and other plants to the citrus-root nematode, *Tylenchulus semipenetrans*.” [Abstract of paper presented at the 30th Annual Meeting of the Pacific Division, American Phytopathological Society, Berkeley, Calif., June 22-25, 1948.] 38 (11), 912.
- b. SMITH, A. L., 1948.—“Control of cotton wilt and nematodes with a soil fumigant.” 38 (12), 943-947.

(339a) Baines, Clarke & Bitters report the occurrence under field conditions of the citrus root nematode, *Tylenchulus semi-penetrans*, on the roots of a number of different species and varieties of *Citrus*, on allied genera and species and on several *Citrus* hybrids. Several of these appear to be previously unrecorded hosts of the parasite. Although *Poncirus trifoliata* can serve as a host, three out of 20 specimens were free from the parasite and the authors suggest that such plants may be valuable in developing nematode-resistant root stocks. T.G.

(339b) Almost complete control of wilt, root-knot and meadow nematodes in cotton followed the use of 31 and 37 gal. per acre of Dowfume W-10, which is said to contain approximately 10% of ethylene dibromide in naphtha B. Yields were markedly increased. A highly susceptible variety of cotton was not adequately protected against wilt and nematodes by applications at the rate of 12.5 gal. per acre. R.T.L.

340—Plant Disease Reporter.

- a. WILSON, C., 1948.—“Root-knot nematodes on peanuts in Alabama.” 32 (10), 443.
- b. FENNE, S. B., HENDERSON, R. G., SMITH, T. J., LEFEBVRE, C. L., TYSDAL, H. M., SMITH, O. F. & GRANDFIELD, C. O., 1948.—“Report of alfalfa-clover disease survey in Virginia.” 32 (10), 444.
- c. THORNE, G., 1948.—“Nematodes as a disturbance factor in greenhouse, plot and field experiments.” 32 (11), 473-475.
- d. ELLIS, D. E. & CLAYTON, C. N., 1948.—“Soil treatments with new insecticides ineffective in control of root-knot.” 32 (11), 476-477.
- e. HEGGESTAD, H. E., 1948.—“Burley tobacco disease situation in Tennessee—1948.” 32 (12), 507-508.
- f. CHRISTIE, J. R. & HAVIS, L., 1948.—“Relative susceptibility of certain peach stocks to races of the root-knot nematode.” 32 (12), 510-514.

(340a) The first case in Alabama of root-knot disease of peanuts due to *Heterodera marioni* was reported in 1946. Four other cases were observed in 1948. In one of these Spanish peanuts were severely infected in a field in Houston County. In the adjacent county of Geneva three fields were affected, the disease being most severe where peanuts were growing for the second successive year: peanuts following maize in the same field were very little damaged. M.T.F.

(340b) Amongst reports of diseases of alfalfa and clover in Virginia, the stem nematode (*Ditylenchus* sp.) is reported for the first time near Richmond. J.B.G.

(340c) Thorne points out that in planning field-plot and greenhouse experiments in plant breeding, crop testing, fungicide and fertilizer testing a vitiating factor not sufficiently reckoned with is the possible effect of plant-infesting nematodes. He supports his case with a number of instances covering a wide range of crops and a number of different parasitic nematodes. T.G.

(340d) Ellis & Clayton report failure to control root-knot by a number of modern insecticides, watered on to duplicate 0.001-acre plots which were at once dug 6-8 in. deep and were sown with snap bean and okra one week and again one month after treatment. Benzene hexachloride (6% gamma isomer) and 50% wettable D.D.T. were used at 33 and 99 lb. per acre; and 25% wettable Parathion, 50% wettable Chlordane, and 40% chlorinated Camphene were used at 11, 33, 99 and 397 lb. per acre. Phytotoxic effects resulted from the higher doses of Chlordane, benzene hexachloride and Parathion, the first two of which were taken up by the beans. All but D.D.T. gave rise to improved growth in cowpeas sown 4 months after treatment but this was not correlated with any root-knot reduction. B.G.P.

(340e) *Heterodera marioni*, noted late in the season, is mentioned by Heggstad among several diseases of burley tobacco in Tennessee in 1948. B.G.P.

(340f) Christie & Havis report on the susceptibility of 11 peach stocks to some or all of 11 races of *Heterodera marioni*. The peach stocks were the susceptible Elberta, the "resistant" Yunnan and Shalil varieties, *Prunus davidiana*, and 7 numbered stocks from Chico [see Helm. Abs., 12, No. 380b]. The root-knot races were four from peaches and seven from various other hosts. Each seedling was exposed to the progeny from a single egg-mass. Most stocks other than Elberta showed high or complete resistance to two of the peach races, though the *P. davidiana* seedlings were variable in their response. B.G.P.

341—Plant Disease Reporter. Supplement.

- a. NANCE, N. W., 1948.—"Some unusual or outstanding plant disease developments in the United States in 1947." No. 177, pp. 143-169.

342—Poultry Science.

- a. TODD, A. C., 1948.—"Pastures for chickens and the parasite fauna." 27 (5), 646-647.

(342a) Todd tabulates the helminth infections acquired by poultry maintained over a period of three years on bare range and on pasture. Of 46 birds reared on the bare lot 100% were parasitized by an average of 103 worms, while of 155 birds reared on pasture 99.3% were infected by an average of 154 worms. Todd states that adequate basal rations can be so supplemented by green food that birds can achieve superior performance while withstanding the effects of heavier parasite burdens than on bare range. R.T.L.

343—Praxis. Berne.

- a. BAER, J. G., 1948.—"Helminthologie médicale." 37 (6), 112-113.
 b. KREIS, H. A., 1948.—"Bemerkungen zu J.-G. Baer: 'Helminthologie médicale'." 37 (12), 216-217.
 c. BARRELET, P., 1948.—"Un nouveau traitement taenifuge." 37 (31), 583-585.

(343a) [This is a critical review of Kreis' "Kompodium der parasitischen Würmer im Menschen", 1947.]

(343c) Barrelet reports success with atebrin in the treatment of four cases of taeniasis saginata. A total dose of 0.8 gm. of the drug is given either in 8 tablets of 0.1 gm. each or as a powder in two cachets, followed after 4 hours by 30 gm. of magnesium sulphate dissolved in 200 c.c. of water flavoured with peppermint. This is repeated, if necessary, two hours later. An enema should be given during the previous evening. R.T.L.

344—Prensa Médica Argentina.

- a. LISTA, G. A., 1948.—"Progresos terapéuticos en medicina interna durante el año 1947. XII.—Parasitología humana." 35 (22), 1038-1041.
- b. ZABLUDOVICH, S., 1948.—"Quiste hidatídico supurado del lóbulo inferior derecho de pulmón tratado con neumoperitoneo." 35 (28), 1351-1355.
- c. GALARCE, J. A., 1948.—"Tratamiento quirúrgico de la hidatidosis pulmonar en el adulto." 35 (37), 1765-1769.
- d. BENCHIMOL, A. S., 1948.—"Quiste hidatídico de órbita." 35 (47), 2241-2245.
- e. MÁRQUEZ, R. N. & MUÑOZ VIVES, M., 1948.—"Apendicitis por parásitos." 35 (47), 2252-2253.
- f. CURUTCHET, P. D., 1948.—"Hidatidosis diafisioepifisaria femoral, tratada sin amputación." 35 (49), 2337-2340.

345—Proceedings of the American Philosophical Society.

- a. SHOPE, R. E., 1948.—"An unfamiliar mechanism of disease transmission." 92 (4), 289-293.
- (345a) Shope summarizes our knowledge of the diseases known to be transmitted by helminths, viz., (i) *Histomonas meleagridis*, the causal agent of blackhead in turkeys, is transmitted in the eggs of *Heterakis gallinae*; (ii) the unknown infectious agent of "salmon poisoning" occurs in the metacercariae of *Nanophyetus salmincola* encysted in salmon and trout but is absent from rediae and cercariae obtained from the mulluscan intermediary, *Goniobasis plicifera* var. *silicula*; (iii) swine influenza virus is carried over from one epizootic to the next in swine lungworm larvae in earthworms as well as in the adult worms. R.T.L.

346—Proceedings of the Pennsylvania Academy of Science.

- a. WINSOR, H., 1948.—"Hosts of eustrongyloid worms from Fairmont Park Aquarium and Philadelphia Zoo." 22, 68-72.
- b. HERBER, E. C. & TAYLOR, L. H., 1948.—"Methods of infecting laboratory rats with *Notocotylus urbanensis*." 22, 99-101.

(346a) Winsor gives a list of thirteen species of marine fish, eleven of fresh-water fish and seventeen of amphibians and reptiles in which larval *Eustrongylides* spp. have been found in the Philadelphia aquarium and zoo. E.M.S.

(346b) Cercariae of *Notocotylus urbanensis*, a parasite of the muskrat, were collected from naturally infected *Physa* sp. and allowed to encyst on lettuce leaves, which were immediately fed to laboratory rats. Three hours later, two rats received intraperitoneally 0.5 c.c. and 0.15 c.c. respectively of tincture of opium (1% morphine). At autopsy 21 days later, the second rat harboured an immature fluke. Of four rats given five drops paregoric one hour after the infective feed, none became infected. Of twelve rats starved in varying degrees for varying periods before being fed infected lettuce, five (41%) became infected. The slowing down of peristalsis appears to increase the infection percentage. None of the control normal rats became infected. E.M.S.

347—Proceedings of the Royal Society of Canada.

- a. ADAMS, J. R., 1948.—"Some helminth parasites of freshwater salmonoid fishes of British Columbia." [Abstract of paper presented at the Annual Meeting of the Royal Society of Canada, Vancouver, June 14-17, 1948.] Year 1948, p. 171.

(347a) This paper is said to contain new records of nematodes, larval and adult cestodes, and the matercercaria of a trematode parastitic in salmonoid fishes of British Columbia; but no details are given. R.T.L.

348—Proceedings of the Society for Experimental Biology and Medicine.

- a. PITTS, T. D., 1948.—"Experimental hatching of the eggs of *Ascaris suum*." 69 (2), 348-351.
- b. OLIVER-GONZÁLEZ, J. & BUEDING, E., 1948.—"Reduction in the number of adult *Trichinella spiralis* in rats after treatment with naphthoquinones." 69 (3), 569-571.

(348a) *Ascaris lumbricoides* eggs from pigs became embryonated when incubated at 23°-25°C. for 24 days. When treated at 37.5°C. with a solution containing 2% of the

commercial sodium hypochlorite (5.25%) preparation "Clorox" and 2% of sodium hydroxide, and washed thereafter in physiological saline, these embryonated eggs produced viable larvae when (i) subsequently incubated in physiological saline at 37.5°-40°C. (hatching up to 100% occurred in 4 weeks), (ii) dried, re-wetted and incubated in saline at 37.5°C. (hatching up to 100% occurred in 2 days), or (iii) centrifuged at speeds from 2,000-3,000 r.p.m. (hatching occurred up to 99.1% during 10 minutes of centrifugation at 3,000 r.p.m. with a starting temperature of 40°C.).

R.T.L.

(348b) A significant reduction in the number of adult *Trichinella* in the intestine of experimentally infected rats occurred after the oral administration of 200 mg. of 2-methyl-1,4-naphthoquinone or 2-hydroxy-3-piperidinomethyl-1,4-naphthoquinone.

R.T.L.

349—Proceedings of the United States Livestock Sanitary Association.

- a. U.S. LIVESTOCK SANITARY ASSOCIATION, 1948.—"Report of Committee on Parasitic Diseases." 51st Annual Meeting (1947), pp. 196-201.

(349a) This report is devoted entirely to a review of the control of internal and external parasites of cattle. Control of gastro-intestinal helminths by prevention of infection in young animals is described, and phenothiazine is recommended for treatment. Procedure for eradication of lungworm infestation is briefly outlined. Liver-fluke treatment with hexachlorethane-bentonite suspension is described, and the control programme is related to the life-cycle of the parasite under varying conditions of climate and management.

E.M.S.

350—Proceedings of the Zoological Society of Bengal.

- a. CHAKRAVARTY, G. K. & BHADURI, N. V., 1948.—"An oxyurid nematode *Neopharyngodon gekko*, gen. et sp. nov. from the Indian lizard *Gekko gekko* (Linn.)." 1 (2), 103-107.

(350a) *Neopharyngodon gekko* n.g., n.sp., from the rectum of *Gekko gekko*, to some extent resembles the genus *Pharyngodon*. Among other characters the worms are diagnosed by the absence of alae in either sex, and the possession of two spicules and two accessory pieces by the male; in the female the caudal process is spiny and the eggs are operculate at one or both ends. An emendation of *Oxyurinae* is proposed in order to accommodate the new genus.

E.M.S.

351—Publications. Institut Pasteur de la Guyane et du Territoire de l'Inini.

- a. FLOCH, H. & CAMAIN, R., 1948.—"Sur un nouveau cas de pseudo-myiase rampante à *A. brasiliense* en Guyane française." No. 168, 4 pp.

(351a) A serpigenous eruption in a native of French Guiana was terminated by the excision of an acne pustule in which a nematode larva, apparently that of *Ancylostoma braziliense*, was afterwards identified histologically. Six cases of this infection had been observed during the previous eight years.

R.T.L.

352—Puerto Rico Journal of Public Health and Tropical Medicine.

- a. TRENT, S. C., 1948.—"Anthiomaline and neostibosan in the treatment of filariasis (*Dirofilaria immitis*).", 23 (3), 311-360. [Also in Spanish pp. 361-392.]

(352a) Six dogs infected with *Dirofilaria immitis*, which were injected with anthiomaline in 0.8 mg. doses per kg. body-weight five times weekly, were free of microfilariae at the end of the third week and remained free during an observation period of 12 weeks. The total dose required to eradicate the circulating microfilariae varied from 126-277 mg. of antimony given in 6-22 days. The morphology and motility of the microfilariae present during the course of treatment were not affected. Transitory anorexia was the only reaction observed. At autopsy no microfilariae were found in any of the internal organs; of a total of 36 adult worms found, 26 were alive. The ovaries of the female worms only rarely showed pathological changes; the testes were normal. Neostibosan, injected intravenously into six

infected dogs in a total dosage of 4.06–8.4 gm. in a short intensive course, caused a progressive decrease of 52–97% in the microfilarial count. After 11 weeks a second course of treatment freed two dogs from microfilariae, but toxic symptoms resulted and proved fatal in two others. Out of 71 adult worms found in the treated animals, 63 were alive. R.T.L.

353—Quarterly Journal of Microscopical Science.

- a. SMYTH, J. D. & HOPKINS, C. A., 1948.—“Ester wax as a medium for embedding tissue for the histological demonstration of glycogen.” 89 (4), 431–436.
- b. OVERGAARD, C., 1948.—“A simple method for orientating small objects for sectioning, with special regard to nematodes.” 89 (4), 437–438.

(353a) Experiments with *Ligula intestinalis*, which contains about 30% glycogen, showed that glycogen in tissue is very impermeable to paraffin wax and with rapid embedding is easily lost during the subsequent cutting and flattening of sections. The effect of prolonged embedding renders the tissue hard and refractive, but this can be avoided if the paraffin wax is replaced by Steedman's ester wax. R.T.L.

354—Report. East Malling Research Station.

- a. DICKER, G. H. L., 1948.—“A preliminary report on the strawberry eelworm (*Aphelenchoides fragariae* Ritzema Bos).” 35th (year 1947), pp. 144–147.

(354a) Dicker describes the symptoms associated with *Aphelenchoides fragariae* in Royal Sovereign strawberry plants. They include death of the primary crown buds, twisting and puckering of the leaves, and the appearance on the dorsal side of the lamina, at the base of the midrib, of discoloured areas with a hard rough surface. Similar symptoms occurred in healthy plants after inoculation with the nematodes. Most of the eelworms are found in the crown buds. The discoloured areas on the leaves are caused by their feeding; this appears to continue throughout the winter as damage is often severe in the spring, but becomes less obvious as the rate of growth of the plants increases. The only effective means of control is by careful roguing of runner beds in March, May and late summer. M.T.F.

355—Report of the Entomological Society of Ontario.

- a. BAKER, A. D., 1948.—“Some notes on experimental infestation of potato tubers with the potato-rot nematode, *Ditylenchus destructor* Thorne, 1945.” 78th (year 1947), pp. 32–38.

(355a) Baker experienced difficulty in transferring *Ditylenchus destructor* to healthy tubers by contact or by the attachment of an infested slice to a cut tuber surface, but has devised three methods whereby he succeeded in setting up infestations. In (i) the “flap” and (ii) the “core” methods, the tuber to be inoculated is cut with a cork borer before a piece of infested tissue is inserted; the flap or core is then restored and the cut surface is covered with cellulose tape which prevents evaporation. In (iii) the “pad” method, infested material is applied to the outside of the tuber by means of chiropodist's “corn pads.” By the third method, Baker was able to show that invasion of the tissues of a tuber does not take place through the intact skin but through the eyes. All three methods are illustrated by photographs. Observations are presented on the progress of potato-rot infestations and on populations of the parasite in infested potato tubers. T.G.

356—Revista Brasileira de Biologia.

- a. FREITAS, J. F. TEIXEIRA DE, 1948.—“Echinostomatidae parasito de uretér de ave (Trematoda).” 8 (4), 489–492.

(356a) Trematodes somewhat resembling *Stephanoprora anomala* Travassos were found in the ureters of *Casmerodius albus egretta* and *Leucophoyx thula thula*. They are made the type of a new genus *Ignavia* of Echinochasmidae, distinguished from *Stephanoprora* by the vitellaria invading the uterine zone, and are described as *Ignavia venusta* n.g., n.sp. A species described by Dietz (1910) from *Sterna cantiaica* as *Echinostomum* sp. inq. is now named *Ignavia inops* n.sp. E.M.S.

357—Revista de la Facultad de Medicina Veterinaria, Lima.

- a. SANTIVANEZ M., J. & RAKOWER C., M., 1948.—“Dos casos de filariosis canina.” 3 (1), 39-43.
- b. RUIZ URBINA, H., 1948.—“Resección del ciego en un perro infestado de *Trichuris vulpis*.” 3 (1), 46-49.

358—Revue de Médecine Vétérinaire. Lyon et Toulouse.

- a. ROYER, A. & BENOIT, A., 1948.—“Sur un nouveau dérivé de la phénothiazine : la stronglamine. Son action sur les strongyloses animales.” 99, 253-265.
- b. BONNEAU, P., 1948.—“Observation de tétramérose dans un troupeau de canards. Traitement par la phénothiazine.” 99, 275-277.

(358a) It is claimed that the intravenous injection of thiodiphenylamine sodium disulphonate, a new derivative of phenothiazine named “Stronglamine”, is more effective than phenothiazine in pulmonary strongylosis of sheep, goats and calves, and in gastrointestinal strongylosis of horses. The dose, 10 or 20 c.c. of a 10% solution for the ruminants and 50 c.c. for horses, is injected into the jugular vein. R.T.L.

(358b) Phenothiazine is an effective anthelmintic for ducks infected with *Tetrameres* spp. Twenty-five birds were given 0.5 gm. per kg. body-weight daily for five consecutive days. Two died; 23 were completely cured. R.T.L.

359—Revue de Zoologie et de Botanique Africaines.

- a. FAIN, A., 1948.—“Vers nouveaux de l'okapi.” 41 (2/3), 222-230.

(359a) Three new species are described from the oesophageal tissues of *Okapia johnstoni* captured at the Epulu River in the Ituri Forest, Belgian Congo, viz., (i) *Dipetalonema okapiae* n.sp., (ii) *Gongylonema rodhaini* n.sp. which is differentiated from the closely related *G. pulchrum* by festooned cervical alae, and from *G. mönnigi* and *G. verrucosum* by its bilateral cervical alae, and (iii) *Sparganum okapiae* n.sp. with a characteristic pincer-like posterior end. R.T.L.

360—Rhodesia Agricultural Journal.

- a. MOSSOP, M. C., 1948.—“Report of the Division of Entomology for the year ending 31st December, 1947.” 45 (3), 230-248. [Issued separately as *Bull. Min. Agric. S. Rhod.*, No. 1445.]
- b. ANON., 1948.—“Tobacco Research Board. Introduction and short summary of Annual Report for 1947/1948 season.” 45 (5), 443-453. [Issued separately as *Bull. Min. Agric. S. Rhod.*, No. 1456.]

(360a) Mossop reports *Pratylenchus pratensis* from potatoes: a new record for Southern Rhodesia and only the second for South Africa. He also reports numerous cases of attack by *Heterodera marioni* on potatoes. J.B.G.

(360b) [The full report has been published as *Publ. Tobacco Res. Bd., S. Rhod.*, No. 11, 1948. For abstract see *Helm. Abs.*, 17, No. 221a.]

361—Scalpel. Bruxelles.

- a. WARMOES, F., 1948.—“Intérêt de l'examen radiologique dans certains cas d'ascaridiose.” 101 (20), 473-474.

(361a) [A fuller account of this paper appears in *Acta gastro-enterol. belg.*, 1948, 11 (3), 148-152.]

362—Schweizerische Medizinische Wochenschrift.

- a. VOGEL, H., 1948.—“Bilharzia, eine Wurmseuche der warmen Länder.” [Abstract of a paper presented to the Medizinische Gesellschaft Basel, 15th January, 1948.] 78 (35), 863. [Discussion p. 864.]

363—Schweizerische Zeitschrift für Pathologie und Bakteriologie.

- a. KENT, H. N., 1948.—"Etude biochimique sur le glycogène de *Taenia saginata*." 11 (4), 329-335. [English, German & Italian summaries pp. 334-335.]

(363a) Free and protein-bound glycogen constitutes 5.73% of *Taenia saginata*. Of the three estimation methods used that of Vernes (1928) was the most satisfactory. R.T.L.

364—Scottish Agriculture.

- a. STAMP, J. T. & WATT, J. A., 1948.—"Disease survey of Sourhope Farm." 28 (2), 101-105.

(364a) The clinical condition of the hill sheep on four hirsels of Sourhope Farm on the Scottish border in the spring of 1947 suggested gastro-enteritis, and post-mortem examinations showed very large numbers of intestinal worms, i.e. 5,000 to 20,000 per sheep. Treatment with 20 gm. of phenothiazine was followed by a spectacular and sustained fall in worm egg-counts and mortality rates. During the succeeding summer monthly doses of 20 gm., with weighings and egg-counts, showed no difference between treated and untreated groups except in one hirsell. R.T.L.

365—Service Publication. Division of Veterinary Hygiene, Department of Health, Australia.

- a. SEDDON, H. R., 1948.—"A review of communicable diseases of animals in Australia. With indications of their economic importance, distribution and incidence in 1946-47." No. 3, 37 pp.

(365a) Helminth parasites mentioned as not so far recorded in Australia are *Multiceps multiceps*, *Trichinella spiralis* and *Syngamus trachea*. *Cysticercus bovis* is enzootic at the Metropolitan Sewage Farm, Victoria, and cases of taeniasis *saginata* have been recorded in young children in Western Queensland. *C. ovis* is widespread and a cause of economic loss in Victoria, South Australia and Western Australia; the fox appears to be the normal host in Victoria. *C. tenuicollis* is relatively common in all areas where fat lambs are raised. *C. cellulosae* has been doubtfully recorded in Western Australia (two cases) and Victoria. Hydatids are common in cattle and sheep, and to a lesser extent in pigs, in all States; *Echinococcus granulosus* is not infrequent in dogs on stock farms but is now absent from dogs in most capital cities where meat inspection is properly carried out. *Fasciola hepatica* occurs in the higher rainfall areas of all States except Western Australia and the Northern Territory; the snail intermediaries are given as *Simlimnea brazieri* (New South Wales, parts of Queensland and Victoria, ?Tasmania) and *S. subaquatalis* (South Australia). *Oesophagostomum columbianum* produces serious effects in the summer rainfall areas of Queensland and New South Wales; it is absent from the other States, where *O. venulosum* occurs but is much less serious. *Onchocerca gibsoni* occurs in several States and is a cause of rejection of beef for export. *Oxyuris mansoni* is confined to northern Australia. *Dirofilaria immitis* is a serious cause of ill-health in dogs in northern areas. *Stephanurus dentatus* is most serious in the enzootic areas of Queensland and northern New South Wales where it causes pig mortality and interferes with growth and fattening; it does not occur in South Australia, Tasmania or Western Australia. *Heamonchus contortus* is the most important stomach worm of sheep and cattle in the high summer and general rainfall areas of Australia; it is not a problem in South Australia. *Trichostrongylus* spp. are very widely distributed throughout sheep-raising areas and are particularly important in the winter rainfall areas. *Bunostomum phlebotomum* is a serious parasite of calves of coastal areas of Queensland and New South Wales. E.M.S.

366—Sewage Works Journal.

- a. NEWTON, W. L., FIGGAT, W. B. & WEIBEL, S. R., 1948.—"The effects of sewage treatment processes upon ova and miracidia of *Schistosoma japonicum*. Part II." 20 (4), 657-664.

(366a) At low temperatures (44°-65°F.), digestion or digestion-and-storage periods of 2-3 months were required to render *Schistosoma japonicum* eggs non-viable. Since three weeks only are required to destroy the eggs at moderate to warm temperatures, it is apparent that survival is dependent largely on temperature. In drying sludge, survival for three weeks can be expected at moderate temperatures (60°-75°F.). Drying has no deleterious effect upon

the ova until the moisture content drops well below (less than 20%) the spadeability content (60-70%) commonly used as the criterion for disposal. In sludge dried at very warm temperatures (85°-90°F.), the ova become non-viable within nine days. The intermittent sand filter was very effective against the schistosome eggs, which failed to penetrate 12 in. of sand of 0.5 mm. effective size when applied at rates of 1,000,000 gal. per acre per day. The filter was not effective against miracidia, which appeared to be controlled only by a sand size of 0.3 mm. or less and an application rate not exceeding 200,000 gal. per acre per day. The septic tank process, at 60°-75°F., killed the schistosome eggs in 2-3 weeks, the majority within ten days. A three-week storage period for sludge and scum removed when the tank is cleaned should obviate the hazard of recent entries. Over-accumulation of sludge at the surface and at the bottom should be avoided, to prevent escape of incoming viable eggs with the effluent. E.M.S.

367—Soil Science.

- a. MARTIN, J. P., 1948.—“Effect of fumigation, fertilization, and various other soil treatments on growth of orange seedlings in old citrus soils.” 66 (4), 273-288.

(367a) Martin presents the results of pot experiments showing that seedlings of both sour and sweet orange made 50-175% more growth when grown in “non-citrus” soils than in soils which had supported citrus trees for 40-70 years. The seedlings in old citrus soils did not respond to the usual mineral fertilizers and trace elements. Soil fumigation with a number of different chemicals stimulated growth of citrus seedlings in old citrus soil but not consistently in non-citrus soil; the citrus root nematode, *Tylenchulus semi-penetrans*, was controlled by fumigation of old citrus soils but the growth of sour and sweet orange seedlings was not equal to that in untreated and fumigated non-citrus soils. The author suggests that although microbial factors are probably responsible for reduced growth of citrus in old citrus soils, other factors such as the presence of some toxic material given off from citrus roots, may also be involved. Inoculation of non-citrus soil with water extracts from old citrus soil did not reduce growth of citrus seedlings or result in the establishment of citrus root nematode or the fungus population of the old citrus soil during the course of a nine months' growing period. T.G.

368—South African Medical Journal.

- a. BLAIR, D. M., 1948.—“Schistosomiasis in Southern Rhodesia. Public health aspects.” 22 (14), 462-467.
b. CAWSTON, F. G., 1948.—“The natural history of Bilharzia.” [Correspondence.] 22 (14), 476.
c. EPSTEIN, E., 1948.—“Intra-ocular cysticercosis. Report of a case.” 22 (19), 625-626.

(368a) Schistosomiasis and malaria have now become the two major public health problems in Southern Rhodesia. Blair considers the practicability of control of schistosomiasis by (i) an attack on the worms in the human body, (ii) the prevention of contamination of streams, (iii) an attack on the molluscan vectors, (iv) the destruction of cercariae, the avoidance of contact with infected waters and the provision of swimming baths. In his opinion, mass treatment of infected persons is now possible and practicable. He suggests the development of underground water supplies, the application of copper sulphate where the risks of infection are high, the exploitation of the natural hazards to snail life and propagation, and the use of propaganda to increase the general awareness of the value of good health in the native population. R.T.L.

(368b) Cawston suggests that the Western Province of the Cape may hitherto have been kept free from schistosomiasis by dragon-flies and other useful scavengers, but these have gradually succumbed to efforts at mosquito control. R.T.L.

369—Southern Seedsman. Texas.

- a. SMITH, F. L., 1948.—“Better blackeyes coming; new ‘iron strains’ herald varieties resistant to nematodes and cowpeas wilt.” 11 (7), 16, 42.
b. GEORGE, L. V., 1948.—“New pea for nematode sand.” 11 (9), 13, 49.

(369b) George writes about the production of a new variety of cowpea, Calhoun Crowder, which is reported to be immune to both wilt and nematode attack in the sandy

soils of North Louisiana. He quotes Lynn Hawthorne, the raiser of this pea, as saying that no nematode galls are found on the roots of this variety.

J.B.G.

370—Sprawozdania Wrocławskiego Towarzystwa Naukowego.

- a. JANISZEWSKA, J., 1948.—"Niektóre pasożytne nicienie z ryb Adriatyku." [Abstract.] No. 2 (1947), p. 82.

(370a) The abstract gives a list of parasites and their fish hosts found in the Adriatic, all of which belong to the Cucullanidae, Philometridae and Ascaridae.

E.M.S.

371—Thorax. London.

- a. SUSMAN, M. P., 1948.—"The treatment of pulmonary hydatid disease." 3 (2), 71-78.

372—Tijdschrift voor Diergeneeskunde.

- a. SWIERSTRA, D., 1948.—"Enige mededelingen over echinococcosis." 73 (15/16), 640-645. [English summary p. 645.]
 b. SCHREUR, E., 1948.—"De echinococcosis in de Lijmers." 73 (20), 763-767.
 c. FRICKERS, J., 1948.—"Het voorkomen van de runderparasiet *Setaria cervi* en de varkensparasieten *Stephanurus dentatus* en *Metastrongylus* in Suriname." 73 (22), 888-890. [English summary p. 890.]

(372b) Schreur reports on the incidence of echinococcosis in home-killed pigs during the winter of 1947 to 1948 in an area in the Netherlands. In that area in abattoir-killed animals for the period 1923 to 1943 the incidence in successive 4-year periods was 1.2, 0.8, 0.4, 0.5 and 1.3% respectively. The rate of infection in the home-killed pigs varied considerably from 2.3 to 22.6% from place to place within the area. He suspects that this present high incidence is due to the introduction of infected dogs by German soldiers from badly infected areas in Germany and Western Europe. The destruction and examination of suspected dogs revealed that 50 of the 91 dissected dogs from the Lijmers area were infected with the adult tapeworm. It is suggested that suspected dogs should be destroyed and that inspection of all home-killed pigs and the destruction of infected organs may prove the best means of controlling hydatid disease in man.

P.L.ler.

(372c) Frickers records the presence of *Setaria cervi* in 210 of 500 cattle slaughtered at Paramaribo. Blood smears from all the animals were examined but microfilariae were seen in only one smear. Living worms were found in 186 and dead worms in 24 animals. Animals of all ages were infected. The pathogenicity of the parasite is insignificant. *Stephanurus dentatus* was present in 362 of the 409 pigs from Surinam and in 70 of the 91 animals from British Guiana. The parasite caused mortality and retarded development, and loss of pork from condemnation of affected organs. *Metastrongylus salmi* and possibly other metastrongyles were observed in 146 of the 400 pigs from Surinam.

P.L.ler.

373—Transactions of the American Microscopical Society.

- a. ODLAUG, T. O., 1948.—"The finer structure of the body wall and parenchyma of three species of digenetic trematodes." 67 (3), 236-253.
 b. McNEIL, C. W., 1948.—"Pathological changes in the kidney of mink due to infection with *Dioctophyma renale* (Goeze, 1782) the giant kidney worm of mammals." 67 (3), 257-261.
 c. VOGEL, M., 1948.—"New rodent hosts for *Catenotaenia linsdalei*, with an additional description of this cestode." 67 (3), 266-267.
 d. RIEDEL, B. B., 1948.—"Age resistance of mice to the nematode *Trichinella spiralis*." 67 (3), 268-271.
 e. COMROE, D. B., 1948.—"*Kalicephalus conoides*, n.sp. (Strongylata), a nematode from the rattlesnake *Crotalus triseriatus*." 67 (3), 280-284.
 f. ARCADY, J. A., 1948.—"Hortega's silver carbonate method applied to gill parasites; with a note on the head organs." 67 (3), 285-289.
 g. VOGEL, M., 1948.—"A new anoplocephalid cestode, *Paranoplocephala kirbyi*, from *Microtus californicus californicus*." 67 (3), 299-303.

(373a) Odlaug has studied the composition, structure and organization of the cuticle, parenchyma and muscles of three trematodes from the frog. He failed to find any correlation

between the physical structure of cuticle and the parasite's environment. The parenchymal lacunae are considered to be intercellular rather than intracellular. R.T.L.

(373b) Mink infected with *Diocotophyme renale* are generally in good condition. The parasite is usually in the right kidney and to compensate for the loss of function of this organ the left kidney undergoes hypertrophy. The infected kidney is greatly enlarged, the tissue on its dorsal surface is thickened and in it a bony plate is often found embedded. The calyces are mostly destroyed: those surviving become greatly enlarged and filled with squamous cells. R.T.L.

(373c) *Catenotaenia linsdalei* is reported from *Perognathus californicus* and *Dipodomys venustus* caught in Monterey Co., California, and from *D. heermanni* in Madera Co., California. McIntosh's original description is confirmed. R.T.L.

(373d) Riedel gives experimental data showing that mice six weeks old are much less resistant to infection with *Trichinella spiralis* than when over five months old. R.T.L.

(373e) *Kalicephalus conoidus* n.sp. is described and figured from *Crotalus triseriatus*. The length of the spicules is nearly double that of other species but is within the range of *K. humilis* and *K. enygri*. R.T.L.

(373f) With the aid of modifications of Hortege's silver carbonate impregnation methods the pharyngeal glandular structures, duct and head organs were clearly demonstrated in specimens of *Actinocleidus* sp. from the gills of bass. The glandular structure consists of an anterior racemose portion and a posterior denser portion; both have separate ducts which unite to form a common duct of which the head organs appear to be out-pouchings. This impregnation technique may obscure the taxonomically important copulatory complex. R.T.L.

(373g) A ninth species, *Paranoplocephala kirbyi* n.sp., is added to the genus. *P. kirbyi*, which was found in *Microtus californicus californicus*, is closely related to *P. omphalodes*. R.T.L.

374—Transactions of the Royal Society of Tropical Medicine and Hygiene.

- a. AZIM, M. A. & AYYAD, N., 1948.—"A preliminary report on the value of palm-leaf traps in the survey and treatment of streams infested with snails." 42 (3), 231-246.
- b. GELFAND, M., 1948.—"The diagnosis of schistosomiasis in Southern Rhodesia by the rectal biopsy technique." 42 (3), 283-286.
- c. WILSON, T., 1948.—"Bancroftian filariasis." [Correspondence.] 42 (3), 305-308.

(374a) Azim & Ayyad give an account of the application of palm-leaf traps by the Bilharzia Snail Destruction Section in Egypt, both for the purpose of surveying snail populations and for snail removal. For surveying streams with a scanty snail population the method was shown to be superior to the dip-net technique. When copper sulphate treatment of streams is impossible the palm-leaf trap is an especially convenient and cheap method for snail removal and is now used regularly. The palm-leaf trap was also used in experiments to investigate the movements and distribution of snails and it was concluded that a small number of snails are carried in the middle and upper layers of water in the main canals. They cannot withstand a strong current and in deeper and swifter canals are distributed more or less on the slopes, while in shallow canals they occur equally on the bottom and slopes of the canal bed. J.J.C.B.

(374b) Gelfand describes the technique of rectal biopsy in the diagnosis of schistosomiasis and the results of its application to young adult males admitted to Salisbury Native Hospital. These were divided into three classes: (i) those passing eggs of *Schistosoma mansoni* in the stools but no eggs of *S. haematobium* in the urine, (ii) those passing eggs of *S. haematobium* in the urine but no *S. mansoni* eggs in the stools, and (iii) those passing no eggs in the urine or stools. In 38 patients of class (i), 17 (45%) showed eggs of *S. mansoni*

in the rectal snip, 7 (19%) showed eggs of *S. haematobium* and 8 (21%) showed eggs of both species. In 15 patients of class (ii), 7 (46.7%) had eggs of *S. haematobium* in the rectal snip and two of these seven had, in addition, eggs of *S. mansoni*. In 18 patients of class (iii), 5 (27.8%) showed eggs of *S. haematobium* and two showed eggs of *S. mansoni*. It is pointed out that the method is of value not only in the diagnosis of *S. mansoni* but also of *S. haematobium* in areas such as Rhodesia.

J.J.C.B.

(374c) Wilson does not consider sufficiently conclusive the evidence for Clayton Lane's theory of regular synchronized nocturnal parturitions and a daily destruction of microfilariae in *Wuchereria bancrofti* [for abstract see Helm. Abs., 17, No. 134a]. There is evidence that the microfilariae have a much longer life. A case of blood infection in a child 13 months old suggests that intra-uterine infection may be possible. The absence of microfilariae in cases of elephantiasis is well known but lack of evidence of reinfections suggests a defensive mechanism.

R.T.L.

375—Veterinariya.

- a. VELICHKIN, P. A., LOGGINOV, V. P. & ANTONOV, V. A., 1948.—[Phenothiazine treatment against strongyles and Parascaris in droves of horses.] 25 (4), 5-9. [In Russian.]
- b. KLESOV, M. D. & POPOVA, Z. G., 1948.—[Phenothiazine—new anthelmintic against strongylosis and trichonemiasis in horses.] 25 (4), 9-11. [In Russian.]
- c. PETROV, A. M. & PANISHEVA, L. V., 1948.—[Phenothiazine against *Capillaria plica* in silver foxes.] 25 (4), 12. [In Russian.]
- d. BOROVKOVA, A. M., 1948.—[Epizootology of dictyocauliasis in horses.] 25 (4), 13-14. [In Russian.]
- e. POTEKIN, V. I. & SHCHERBININ, I. V., 1948.—[Treatment of equine parafilariasis with tartar emetic.] 25 (4), 14-15. [In Russian.]
- f. MASLOV, T. M. & CHEBOTAREV, R. S., 1948.—[Mass treatment of horses against strongyles, Parascaris and Gastrophilus.] 25 (4), 16-18. [In Russian.]
- g. KRASTIN, N. I., 1948.—[Diagnosis and treatment of *Thelazia skrjabini* and *T. gulosa* infestation in cattle.] 25 (4), 19-21. [In Russian.]
- h. KRIVOSHTA, E. E., 1948.—[Treatment of unweaned foals against anoplocephaliasis.] 25 (4), 21-23. [In Russian.]
- i. KROTOV, A. I., 1948.—[A programme for dosing against Ascaris in pigs.] [Abstract.] 25 (4), 24. [In Russian.]
- j. VOLKOVA, Z. M., 1948.—[Control of fascioliasis in sheep by 'pre-imaginal' treatment.] 25 (4), 25-27. [In Russian.]
- k. DOROSHKO, I. N., 1948.—[A new method of treating poultry with carbon tetrachloride.] 25 (4), 27-29. [In Russian.]
- l. ANTIPIN, D. N., 1948.—[Prophylaxis of helminthiasis in domesticated animals on pasture.] 25 (4), 38-40. [In Russian.]
- m. ORLOV, I. V., 1948.—[Theoretical principles in the control of helminthiasis in domestic animals in the U.S.S.R.] 25 (5), 4-6. [In Russian.]
- n. ERSHOV, V. S., DEMIDOV, N. V. & PANASYUK, D. I., 1948.—[The use of carbon tetrachloride in parascariasis and strongylosis of horses.] 25 (8), 18-22. [In Russian.]
- o. SCHULZ, R. S. & BOEV, S. N., 1948.—['Post-imaginal dehelminthization'.] [Abstract.] 25 (9), 17-18. [In Russian.]

(375a) Velichkin et al. found that phenothiazine given to horses with the food in doses according to age (adults 25-30 gm., 2-year-olds 20 gm., and yearlings 15 gm.) produced results up to 100% efficacy against *Strongylus vulgaris* and *S. edentatus* and 70-85% against *Trichonema* spp. They also found that it had some anthelmintic effect against *Parascaris equorum*.

C.R.

(375b) Klesov & Popova treated 487 horses with doses of 0.06 to 0.1 gm. phenothiazine per kg. body-weight. They found that the drug was 95-100% effective and improvement was noticed in the condition of the horses.

C.R.

(375c) Petrov & Panisheva administered phenothiazine in 3-gm. doses to 25 silver foxes. When compared after death with 25 control animals, it was found that only six (24%) of the treated animals harboured *Capillaria plica* with an average of 0.8 worms per fox while 20 (80%) of the control foxes were infested and these carried 4.8 worms per animal.

C.R.

(375d) Borovkova found *Dictyocaulus arnfieldi* in horses of all ages. According to her investigation, foals until they are sent to pasture are free from infestation. They become infested at the age of 4-5 months and the maximum infestation is reached in November and December. Generally the infestation is lost by spring, but in adult horses infestation may be found throughout the year. Borovkova experimented with the larvae of *D. arnfieldi* to test their resistance to high and low temperatures. Her conclusions are that the larvae on pasture die out during winter and during hot weather in summer. C.R.

(375e) Potemkin & Shcherbinin treated 210 horses suffering from parafilaria with a 2% aqueous solution of tartar emetic given intravenously on three successive days. They obtained good results. C.R.

(375f) To eradicate strongyles and *Trichonema* infestations in horses, Maslov & Chebotarev treated them with 30 gm. of phenothiazine once a month in two successive months, and afterwards regularly every 38 days. As phenothiazine has no anthelmintic value against *Parascaris equorum*, they advise dosing horses with 15 c.c. carbon disulphide which will remove both ascarids and *Gastrophilus*. C.R.

(375g) According to Krastin, *Thelazia skrjabini* and *T. gulosa* are found in the canalis lacrimalis and are therefore more difficult to diagnose than *T. rhodesii*. Larvae were occasionally found in samples of tears taken in summer (May, June) but the prevalence of summer conjunctivitis and keratitis in some districts made diagnosis easy. Krastin found that *T. skrjabini* and *T. gulosa* are susceptible to iodine *in vitro* and he therefore used 1% and 0.75% solutions of iodine in 70% alcohol (5-8 drops) and found it to be 25% effective. C.R.

(375h) Krivoshta found that the treatment of foals (4-6 months old) with 5-6 c.c. of male fern extract dissolved in 10 c.c. of turpentine or 6 c.c. of carbon tetrachloride plus vegetable oil made up to 30 c.c. is effective against *Anoplocephala magna*. Afterwards, as a purgative, 50 gm. of Glauber's salt were given. C.R.

(375i) For pigs in the temperate parts of the Soviet Republics, Krotov has drawn up the following programme of dosing with santonin. In January a second prophylactic dosing of piglets farrowed in autumn; in April a prophylactic dosing of all pigs; in May a first "pre-imaginal" dosing of piglets farrowed in spring; in June a second "pre-imaginal" dosing of autumn-farrowed piglets, and in November a first "pre-imaginal" dosing of autumn-farrowed piglets as well as a general prophylactic dosing of all pigs. C.R.

(375j) Volkova was able to eradicate *Fasciola hepatica* in sheep by the following method. Sheep, while still indoors, receive two "prophylactic" treatments of 2 c.c. of carbon tetrachloride with an interval of 15 days to one month. After being put out to grass three so-called "pre-imaginal" treatments with the same drug were given at 2-2½ months' interval. In January and April the sheep were examined by Stoll's method for the presence of eggs and where these were absent they were considered to be free from *Fasciola*. According to Volkova hexachlorethane gave very poor results, and should be used only in flocks susceptible to carbon tetrachloride. C.R.

(375k) Doroshko used carbon tetrachloride in doses of 2 c.c. in fowls (1 c.c. in chickens 2-3 months old) against *Ascaridia* and 4 c.c. in geese against *Amidostomum*. This was administered by injection into the crop. He found this method easy and safe for birds and one which gave good results. Presence of food in the crop did not reduce the efficacy of the drug and facilitated injection. According to Doroshko, by using this method it is possible to dose 1,000 hens in 3 hours and 40 minutes. C.R.

(375l) In this essay, Antipin discusses such control measures as prophylactic dosing (before animals are sent to grazing); separate grazing of young animals; change of pasture; "pre-imaginal" treatment (where possible); removal of faeces, and scattering of the faeces. C.R.

(375n) Ershov et al. discuss the toxicity of carbon tetrachloride. In their opinion this is a safe anthelmintic for horses. They recommend doses of 40 c.c. for adult horses, 20 c.c. for 2-year-olds, 10 c.c. for yearlings and 5-10 c.c. for foals of 3 months and older. It is administered in gelatin capsule or by stomach tube. C.R.

(375o) Schulz & Boev refer to the effect of phenothiazine in inhibiting egg-laying of worms and in preventing the eggs from hatching on the ground. In this way the contamination of pasture is much reduced and for this type of control the authors introduce the term "post-imaginal dehelminthization". C.R.

376—Veterinary Journal.

- a. EL HINDAWY, M. R., 1948.—"The studies on the blood of dogs—II. Haematological findings in (A) apparently healthy dogs harbouring intestinal parasites; (B) dogs infested with *Spirocercia sanguinolenta*." 104 (5), 159-165.

377—Veterinary Medicine.

- a. THRELKELD, W. L. & JOHNSON, E. P., 1948.—"Observations on the pathogenicity and viability of *Ostertagia ostertagi*." 43 (11), 446-452.

(377a) Experimental infection of calves with *Ostertagia ostertagi* showed that in some cases definite pathological lesions were produced. Abomasal sections revealed numerous developing parasites in the wall; there was a reduction in blood haemoglobin. Faecal egg-counts and cultures were not indicative of the degree of infection nor were they accurate tests of the presence of infection. Infective larvae of *O. ostertagi* remained infective on paddocks in Virginia for periods varying between 4½ and 6½ months. J.W.G.L.

378—Virginia Medical Monthly.

- a. GARST, L. W. & BENGTSON, A. W., 1948.—"Report on the infestation of internal parasites throughout Virginia." 75 (5), 231-232.

379—Wiener Klinische Wochenschrift.

- a. KASTRANEK, F., 1948.—"Ueber eine Oxyureninfektion eines Mesenteriallymphknotens." 60 (3), 51-52.
 b. FUCHS, G., 1948.—"Echinococcuscysten im Magen." 60 (8), 135.
 c. POPPER, L., 1948.—"Medizinisches aus Bolivien." 60 (19), 297-301.
 d. HAMPERL, H., 1948.—"Askariden im Ductus choledochus." [Abstract of paper presented at XVII. Seminarabund Salzburg, 16th January, 1947.] 60 (19), 311.
 e. FUCHS, G., 1948.—"Bilharziosis der Blase und Harnröhre." [Demonstration.] 60 (41), 676.

(379a) A mature *Enterobius* was found in the stroma of an ileo-caecal lymph node removed from the mesentery of a case diagnosed before operation as appendicitis. E.M.S.

(379c) Hookworm disease is widespread in the low-lying districts of Bolivia: *Necator americanus* is most frequently found but *Ancylostoma duodenale* is not unknown. In a group of army recruits 30% had *Necator* infection (5% with severe anaemia), 20% had *Ascaris*, 15% *Trichuris* and 6% *Strongyloides stercoralis*. *Microfilaria ozzardi* was found once in a blood specimen. Tapeworm infections, including *Hymenolepis nana*, are also found. A.E.F.

380—Zeitschrift für Kinderheilkunde.

- a. SCHEID, G. & MENDHEIM, H., 1948.—"Über das Vorkommen des Rattenbandwurmes beim Menschen in Deutschland." 65 (5/7), 587-590.

381—Zentralblatt für Bakteriologie. Abteilung 1. Originale.

- a. WENDEROTH, H., 1948.—"Zur Entstehung latenter Trichinosefälle." 152 (8), 590-599. [English, French & Russian summaries p. 598.]

(381a) Mild or latent trichinosis has been noted in persons with anacid or sub-acid gastric juice. Wenderoth carried out *in vitro* experiments which showed that the percentage of larvae liberated in a given time increases as acidity approaches the optimum for peptic digestion. In duodenal juice the parasites resist tryptic digestion for a very long time. E.M.S.

NON-PERIODICAL LITERATURE

382—ANON., 1948.—“Potato rot nematode.” Ottawa : Science Service, Department of Agriculture, 1 p.

383—BENBROOK, E. A. & SLOSS, M. W., 1948.—“Veterinary clinical parasitology.” Ames, Iowa : Iowa State College Press, 187 pp., \$4.50.

384—BURTON, W. G., 1948.—“The potato. A survey of its history and of factors influencing its yield, nutritive value and storage.” London : Chapman & Hall Ltd., xiv+319 pp., 25/-.

Burton's text-book refers to the two potato eelworms, *Heterodera rostochiensis* and the tuber eelworm (here called *Anguillulina dipsaci*), on pp. 119-121. Symptoms and control by rotation are briefly handled. [In the case of *H. rostochiensis* it is misleading to state that the cysts are $\frac{1}{16}$ th inch in diameter, and that “non-susceptible crops include nearly all grain crops”.]

B.G.P.

385—CLAESSEN, G., 1948.—“Aspects of hydatid disease.” In : McLaren, J. W., Editor, “Modern trends in diagnostic radiology”, Chapter 28, pp. 407-415. London : Butterworth & Co. (Publishers) Ltd., xxi+464 pp., 60/-.

386—DUBOIS, A. & BERGHE, L. VAN DEN, 1948.—“Diseases of the warm climates. Their clinical features, diagnosis and treatment.” London : William Heineman (Medical Books) Ltd., xv+445 pp., 42/-.

387—GIGLIOLI, G., 1948.—“Malaria, filariasis and yellow fever in British Guiana. Control by residual D.D.T. methods with special reference to progress made in eradicating *A. darlingi* and *Aedes aegypti* from the settled coastlands.” Georgetown : Mosquito Control Service, Medical Department, x+226 pp.

In part IV of this monograph on the principal mosquito-borne diseases of British Guiana, Giglioli gives an account of a campaign to control filariasis bancrofti by the use of D.D.T. Materials, equipment, insecticide dosage and techniques are detailed in Part II. The chief local vectors of *Wuchereria bancrofti* are *Anopheles darlingi* (which is also the main carrier of malaria) and *Culex fatigans*. As *W. bancrofti* requires about two years to attain maturity, early clinical signs may be present before the appearance of microfilariae in the blood. In the majority of cases, infection is unaccompanied by obvious clinical manifestations while in many instances advanced and typical clinical manifestations may occur, although microfilariae are absent owing to death of the parent worms or blocking of the lymphatic trunks. Statistics of microfilarial incidence, however, indicate the number of persons capable of transmitting the infection. In the sewered part of Georgetown the microfilaria rate was 15.7% whereas in the unsewered suburbs Kitty and Lodge it was 24.7% and 21.4%. D.D.T. residual spraying of the interior of houses on a 6-8 months' cycle combined with spraying of pit latrines on a 3 months' cycle resulted in the eradication of *A. darlingi* and greatly reduced the average *Culex fatigans* population in bedrooms. 24% of the *C. fatigans* females from D.D.T.-treated houses died in the laboratory in one week but the survivors showed an infection rate of 10.8% and an infectivity rate of 1.89% as compared with 7.27% and 1.24% respectively prior to the commencement of D.D.T. control. At the height of the rainy season, *Culex* were again breeding in 64.7% of the sprayed pit latrines within a few weeks. As *C. fatigans* adults and larvae are much less susceptible to D.D.T. than *A. darlingi*, it is probable that still more resistant strains may be produced.

R.T.L.

388—INTERNATIONAL CONGRESSES ON TROPICAL MEDICINE AND MALARIA, 1948.—“Proceedings of the fourth International Congresses on Tropical Medicine and Malaria, Washington, D.C., May 10-18, 1948.” Washington : United States Government Printing Office ; Vol. I, xiii+1-946 pp ; Vol. II, viii+947-1810 pp.

[This official report gives in full the papers, with summaries of the discussions thereon, which were presented to the 4th International Congresses on Tropical Medicine and Malaria. For abstracts, which were based on the authors' synopses circulated to the Congresses, see Helm. Abs., 17, No. 245.]

389—LEMIERRE, A. et al., Editors, 1948.—“Traité de médecine. Tome II. Maladies infectieuses (seconde partie) et maladies parasitaires.” Paris : Masson et Cie, 955 pp., 1,950 fr.

390—*LENZ, G., 1948.—“Ferkelsterben und Kümern der Schweine. Ein Beitrag zur Feststellung der Ursachen dieser Krankheiten und zu ihrer Bekämpfung.” Berlin : Richard Schoetz, 43 pp., 2.40 RM.

Lenz considers that parasitic infestation is the main cause of piglet mortality in the district around Miltenberg a.M., food shortage and deficiency diseases being the next greatest factor. The German abstractor considers that parasitism is not generally so important, and that in other areas heavy mortality may be due to a variety of other causes. [From an abstract in *Dtsch. tierärztl. Wschr.*, 1948, 55 (23/24), 187.] E.M.S.

391—MATHIS, C. & PONS, R., 1948.—“Manuel de pathologie exotique.” Paris : Presses Universitaires de France, viii+642 pp., 1,400 fr.

392—NAUCK, E. G., ENIGK, K., REICHENOW, E., VOGEL, J., WESTPHAL, A. & WEYER, F., 1948.—“FIAT review of German science, 1939-1946. Tropical medicine and parasitology.” Office of Military Government for Germany, Field Information Agencies Technical, British, French, U.S., viii+253 pp.

393—PALTI, J., 1948.—“Root diseases and nematodes on field and garden crops in Palestine.” In Hebrew, 87 pp. [English summary pp. i-vii.]

One hundred and twenty-six hosts for *Heterodera marioni* have so far been recorded for Palestine. Infections are prevalent during the summer months on the lighter soils. Among the especially severely affected crops are bean, beet, carrot, chilli, cowpea, cucumber, eggplant, lettuce, pea, marrow, pumpkin, potato, radish, strawberry, tomato and watermelon, as well as calendula, carnation and dahlia. Important summer crops which are resistant are maize, sorghum, groundnuts and sweet potatoes. Sound rotations and the ploughing of fallow soil during the summer months are still the most practical control measures in Palestine as soil fumigants have not yet been tested. R.T.L.

394—REPORT. THE ROYAL SOCIETY EMPIRE SCIENTIFIC CONFERENCE, London, June-July 1946.

- a. BULL, L. B., 1948.—“Problems in agricultural science in Australia : animal problems—the animal industry.” Vol. I, pp. 323-329.
- b. CLUVER, E. H., 1948.—“Medical research in the Union of South Africa.” Vol. I, pp. 464-517.
- c. DU TOIT, P. J., 1948.—“Regional research in Africa—veterinary science.” Vol. II, pp. 521-525.

(394a) In the coastal areas of the tropical parts of Australia as well as in the temperate regions, helminths cause severe losses in calves. Hydatid and liver-fluke call for constant vigilance in some districts. In sheep, helminth infections are a serious problem in areas of higher rainfall and dense sheep populations. In the summer rainfall areas, oesophagostomiasis has proved to be most difficult to control. Phenothiazine has proved useful but in the absence of nutritious grazing in the winter months it has proved inadequate. R.T.L.

(394b) Cluver states that although bilharziasis is a serious disease in many parts of South Africa and is spreading, the Union has no research parasitologist and virtually no work on the subject is being carried out anywhere in the Union. Laboratory attempts to implicate *Limnaea natalensis* as a vector of urinary bilharziasis have failed. Research on all aspects of the disease is urgently required. R.T.L.

(394c) Du Toit suggests that as centres for long-range fundamental research on veterinary problems of Africa, Onderstepoort in South Africa and Kabete in Kenya should be selected. In the field of helminthology it is highly desirable that studies on the life-histories of the parasites, the pathology of the diseases they produce, the influence of drugs on the parasites and other measures designed to break the life-cycle or to save the life of the host should be concentrated in a well equipped and sufficiently staffed institute. The continuity of and the adequate provision for fundamental research must be assured at all costs. R.T.L.

- 395—ROYAL COLLEGE OF PHYSICIANS, 1948.—“The nomenclature of disease, drawn up by a joint committee appointed by the Royal College of Physicians of London.” London: His Majesty's Stationery Office, 7th edit., xiv+386 pp., 8s. 6d.

This 7th edition gives an aetiological classification of disease in which are listed those helminths known to cause human disease or to have been reported as incidental parasites, together with their arthropod [but not their molluscan or crustacean] vectors. This classification is then applied to the diseases of the body as a whole and of its systems, giving the most common associations and indicating the site, nature and cause of the disease. R.T.L.

- 396—SCHENK, E. T. & McMASTERS, J. H., 1948.—“Procedure in taxonomy.” London: Oxford University Press, revised edit., vii+93 pp., 14/-.

Schenk & McMasters' “Procedure in Taxonomy” (1936) has been revised and partly rewritten by Keen & Muller. It reproduces in compact form the International Code of Zoological Nomenclature and summarizes the opinions rendered from time to time. There are helpful chapters on systematic categories, types and the storage of type material, specific and trivial names, and synonymy, and the manner in which the description of a new species should be set out is outlined. A list is given of Latin terms and abbreviations used internationally by zoologists. R.T.L.

- 397—STAPLEY, J. H., 1948.—“Pests of farm crops.” London: E. & F. N. Spon, Ltd., 8+325 pp., 21/-.

Stapley devotes the last chapter of this handbook for farmers to Nematoda. The species of *Heterodera* dealt with are *H. rostochiensis*, *H. schachtii*, *H. göttingiana* and *H. major*, while *H. marioni* is mentioned briefly. Attack by *Anguillulina dipsaci* on oats, potato, clover, onion and a few other crop plants is also dealt with. M.T.F.

- 398—WESTON, W. A. R. Dillon, 1948.—“Diseases of potatoes, sugar beet and legumes.” London: Longmans, Green & Co., viii+86 pp., 4/-.

This booklet brings together for the use of farmers and students a series of articles contributed to the *Journal of the Ministry of Agriculture*. The nematodes dealt with are potato root eelworm (*Heterodera rostochiensis*), stem eelworm (*Anguillulina dipsaci*) on potato, sugar-beet eelworm (*Heterodera schachtii*), and stem eelworm (*A. dipsaci*) on clover. In all cases the life-cycle is illustrated by clear diagrams, and symptoms and control measures are described. M.T.F.

- 399—YBARRA, G. A., 1948.—“Estudio monográfico de nemátodos parásitos de las aves de México.” Thesis, Mexico, 58 pp.

Ybarra identifies and describes a number of species of nematodes collected from birds in Mexico, which were in the collection of the Instituto de Biología. They include *Aprocta caballeroi* n.sp., from the anterior chamber of the eye of *Buteo borealis*. E.M.S.